ColorFull: A Research-Creation Game for Wellness Reflection

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ABSTRACT

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For all its frequency in North American popular culture, wellness media remains a contested product on behalf of public health officials, medical professionals, and designers alike. Central to this debate is whether wellness is a tool for capitalizing on misinformation and passivity, or if it plays a useful role in meeting actual social needs. Within the realm of game studies and design, critiques of emotional games and empathy games have run into similar pitfalls. The shared cultural popularizations of the 'wellness' and 'emotional game' movements form the starting point of my intersectional, experimental, creation-as-research intervention known as *ColorFull,* asking: *What is the feeling of wellness, and how can one play with that feeling?* 'Wellness' in this thesis is used as a malleable term for the broad, socially-dependent, and personally-significant factors that influence individual wellbeing.

In this thesis I review *ColorFull*'s development and public dissemination. The project began with a series of three participatory design workshops, which produced themes that were further developed with Reflective Game Design, Critical Play, Participatory Design, and "Radically Soft" praxis. This in turn helped build a physical card based drawing game, wherein group discussion and sharing promotes individual reflection on the user's own conceptions of wellness. From testing this work, I created a set of my learned best practices useful for future emotional and/or wellness game designers.

Keywords: reflective game design, social game, wellness, paper prototyping, emotional game

DEDICATION

In memory of Michael J. Andrews, “Uncle Mike”.

We’ll keep your flame alive.

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Chapter 1: Introduction

This thesis is a work of game design research-creation, situated as an exploratory cross-section of two contemporary popular culture phenomena: the "emotional games" movement, and the "wellness" games movement. In her 2016 publication *How Games Move Us,* human computer interaction and game design scholar Katherine Isbister writes of the emotional games movement that "at this moment there's a Renaissance taking place in games, in the breadth of genres and the range of emotional territory they cover" (Isbister, xvii). This richness of game sensitivity, argues Isbister, can be observed in a plethora of titles- from large budget "AAA" games, to independent 'art game' productions. This newer display of extreme feeling is not accidental, nor a passive design error; baked into the mechanics of these 'emotional games' are designer-intended ways of eliciting engaging interaction through emotionally rich experiences.

The purpose of using emotion and sensitivity in gameplay can vary depending on the goal of the game in question. For the empathy or games for change subgenres of emotional games, emotions are often used to create feelings of connection to various social causes (Belman & Flanagan, 5). The digital game *Bury me my love* puts the player in the shoes of a Europe bound refugee named Nour whose husband still remains in an active war zone (*Bury Me My Love,* The Pixel Hunt et. al*). Train* is a board game wherein players seem to be following orders with the innocuous task of creating efficient train routes, only to discover during play that their passengers are bound for Auschwitz (*Train*, Romero). Other emotional games are less weighted in their gameplay stakes. 2012's *Journey* has players traversing sweeping landscapes with a silent protagonist, whose titular journey is built purely upon the feeling of truly connecting with one's self and one another (Thatgamecompany & Chen).

While the recognition that games carry emotional weight may seem an appealing affirmation of games as art and a welcome counter to popular media assumptions of inherent game addiction and violence, the emotional games movement- and particularly the empathy game movement - has not been without its critics. Prominent former empathy game designers like Anna Antropy have argued empathy game framing favours privileged consumerism over any meaningful form of activism or allyship (Pozo; Solberg). Empathy driven rhetoric and policy has also been critiqued for its divisive implications outside of games. In *The Cultural Politics of Emotions*, feminist scholar Sara Ahmed reflects on the transactional nature of empathy:

> This is love as empathy: I love you, and imagine not only that I can feel how you feel, but that I could feel your pain for you. But I want that feeling only insofar as I don't already have it; the desire maintains the difference between the one who would 'become' in pain, and another who already 'is' in pain or 'has' it. In this way empathy sustains the very difference that it may seek to overcome: empathy remains a 'wish feeling', in which subjects 'feel' something other than what another feels in the very moment of imagining they could feel what another feels... I want to suggest here, cautiously, and tentatively, that an ethics of responding to pain involves being open to being affected by that which one cannot know or feel (Ahmed, 30)

At the same time that digital games have become increasingly sensitive in their player content, a broader appetite for the emotionally laden subject of wellness has risen within North American culture (see fig. 1). Although people have engaged in practices for preventative health for centuries, the mainstream popularization of wellness began in 1948 with the World Health Organization's inaugural constitution stating: "Health is a state of complete physical, mental and social *well-being* and not merely the absence of disease or infirmity" (World Health Organization, 1). Today, the notion of wellness is often used in the context of preventive and supportive health products or initiatives.

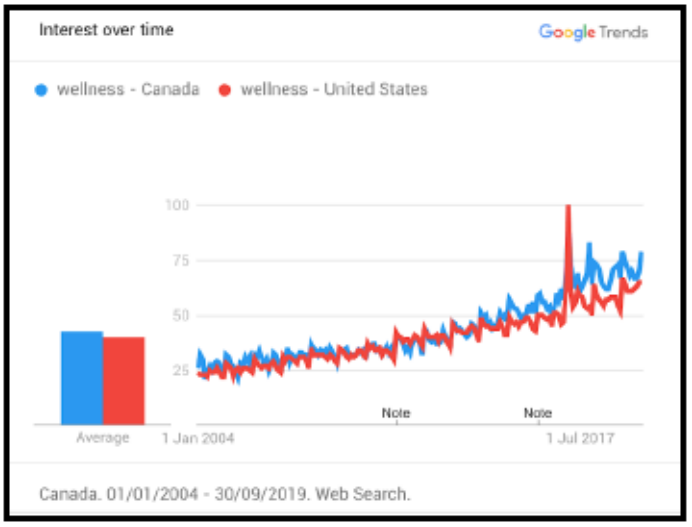

Fig. 1. Google internet searches for wellness have continued to show increased interest over time in the US and Canada in the last 15 years. Google Trends, https://trends.google.com/trends/explore/TIMESERIES/1576872600?hl=en-GB&tz=300&date=2004-01-01+2019-09-30,2004-01-01+2019-09-30&geo=CA,US&q=wellness,wellness&sni=3

In 2017 the global wellness industry was worth an estimated 4.2 Trillion dollars (Yeung & Johnston, iii). Among this amount, 575 billion was credited to preventative & personalized medicine and public health - a figure which also includes games. Ranging from gamified fitness trackers to relaxing bubble popping mobile applications, these games have taken their respective markets by storm. In 2018 Apple identified the 'Self-care' trend as part of their annual 'Best of' retrospective (Apple Inc). Among Apple's suggested applications was the #SelfCare companion application by Tru Luv Media, Inc. Players can pet their cat, use tarot cards, and otherwise take time for physical and mental care within the scope of an on-screen virtual bedroom. In broad strokes, wellness media products attempt to tackle the ailments of modern life - stress, overwork, isolation, and technological overload. #SelfCare designer Brie Code writes that her project is a response to the unchallenged dominance of mobile devices, and specifically, mobile gaming:

> As a former game designer, I think mobile games can tell us something about our relationships with our phones. There are 5bn mobile users, but only 2.2bn mobile gamers. Many people, including me, find mobile games uninspiring or even stressful… Now, when I feel a spike of anxiety and unconsciously reach for my phone, if I end up in #SelfCare instead of a game, I calm myself, and put down the phone a moment later feeling better instead of worse. When we can achieve this for you also, we've succeeded (Code).

Emotional, wellness oriented games like #SelfCare can arguabley follow in the footsteps of feminist and civil rights activist Audre Lorde, who wrote that "caring for myself is not self-indulgence, it is self-preservation, and that is an act of political warfare" (Lorde, 131). For Lorde and others, this time is a means of temporary respite and reconnection to self, health, and community before returning to the social justice struggle.

However, the wellness industry more broadly has been critiqued for falling into what some have called a corporate faux-feminist wellness supported by a culture of conspicuous consumption. By putting the #selfcare onus on the individual for their own wellness, responsibility is arguably taken away from larger power systems and inequalities at play. Such a shift at best maintains a passive status quo, and at worst further alienates those who were already marginalized (Penny; Crawford). In partial defense of such claims, the Global Wellness Summit - the largest annual gathering of wellness industry takeholders - declared 2018 the year of 'A New Feminist Wellness.'

> A new wave of feminism – a new more political concept of self-care (less me, more us) – a growing realization that governments and medicine aren't hurrying to "solve" for women's bodies and lives – means that as we move into 2018, there are powerful new intersections between women's empowerment, feminism and wellness (McGroarty et. al, 83).

While accurately pointing out that some individuals are actively pushing back against oppressive barriers to health through the umbrella of self care, this new feminist wellness is still overwhelmingly supported by the production and consumption of product as care. "Glam pink-hued penthouse-loft spaces" (85), "(cute) period panties" (88), and "Tough & Transformative Adventure Travel" (92) are all used by the Global Wellness Summit as means of defining this current wave of feminist wellness.

It is clear that wellness initiatives find themselves entangled in a net of overlapping and often competing interests and forces. With these complexities in mind, the goal of my thesis is to provide an alternative playful platform in which players can reconsider and reshape these paradigms. By designing an organic but designated area to consider what wellness means to them, I posit that player emotions and perspectives can be respected while also being played with for an overall reflective game experience. The two key questions being addressed in this work are: *What is the feeling of wellness, and how can one play with that feeling?* To do so, this thesis uses the reflective power of the games medium to generate and sustain critical, reflective interactions, ultimately addressing issues of health (in)equity discourse and game design ethics. Games serve as both a vehicle for this general exploration of meaning, and a targeted meta-reflection on the role they games as product play in a consumption centric wellness landscape.

In Chapter 2, I outline the key theories that have formed the theoretical framework of this project. I first contextualize the impetus for this project within a larger discourse of intersectional public health concerns, and review how an attitude of 'radical softness' may address some of these issues. Reflective Game Design is then reviewed for its foundational influence in establishing my framing of games as a vehicle for spurring player reflection. Critical Play is discussed for its useful workflow in designing a critically reflective game. Finally, Participatory Design is reviewed for its influence in structuring the exploratory workshop phase of this project. Once this theory is established, Chapter 3 then moves into a

review of my research methodology. The design of this project can be understood as having three general phases; a first workshop-based data collection phase, a second iterative prototyping phase, and a final synthesis and dissemination phase. Chapter 4 details this first exploratory workshop component, wherein eight student participants co-designed the reflective values that would advance into the second iterative prototyping phase. Grounded theory analysis of these workshops is used to contextualize the workshop projects into a workable model. Chapter 5 discusses in greater depth the two subsequent iterative game developments that started from this model, before modifications were made based on qualitative interview transcripts. Finally, I close with my final reflections and conclusions in Chapter 6, producing insights for future designers working in this area of concern.

Chapter 2: Theoretical Framework

This cross-disciplinary theoretical framework groups literature into four main thematics: ***intersectionality, reflection, criticality,*** and ***participation.*** *Intersectionality* contextualizes the unique value of this research for the larger, intersectional, socio-cultural schema of concerns it addresses. The theme of *reflection* addresses why the "reflective" medium of games is a uniquely suitable method for this thesis's knowledge seeking purposes. Similarly, *criticality* exposes why games and critical design generally can support new ways of thinking among design users. *Participation* addresses the power of social games to address social concerns, as well as address why designers should seek out multiple perspectives in an intersectional design project. Finally, in order to create an actionable insight for these literature thematics moving forward, they are connected through a mandate of ***physical game design***.

Intersectionality and Wellness

Human health is a complex biological and socio-cultural phenomenon, one that interfaces between our physical and mental selves as well as our place and sense of being in the greater world. The Centers for Disease Control and Prevention writes that:

> ...well-being includes the presence of positive emotions and moods (e.g., contentment, happiness), the absence of negative emotions (e.g., depression, anxiety), satisfaction with life, fulfillment and positive functioning (CDC)

The World Health Organization additionally describes wellness as:

> The optimal state of health of individuals and groups. There are two focal concerns: the realisation of the fullest potential of an individual physically, psychologically, socially, spiritually and economically, and the fulfilment of one's role expectations in the family, community, place of worship, workplace and other setting (World Health Organization, "Health Promotion")

Within these two definitions, we see allusions to health's additional reliance on broader *social determinants of health*, or, "the broad range of personal, social, economic and environmental factors that determine individual and population health" (Government of Canada). Examples of such determinants include, but are not limited to: education and literacy, socio-economic status, access to services and support, race (and racism), gender,

culture, and environment. A social determinant-informed approach to health care, awareness, promotion and/or prevention thus inevitably finds itself entangled further within *intersectional, health equity* concerns. Lawyer, scholar, and civil rights activist Kimberlé Crenshaw formally coined the term *intersectionality* in reference to the complex and intersecting nature of one's identity, with the aim of demonstrating that failure to acknowledge this complexity can be erasing to another's lived experiences. Using examples of black women's exclusion from legal and feminist discourse, Crenshaw writes that a "focus on the most privileged group members marginalizes those who are multiply-burdened" (Crewnshaw, 140). Obstacles created from these interconnected social identities can converge and "compound themselves", requiring unique approaches to achieve equity (Crenshaw, "Kimberlé Crenshaw: What is Intersectionality?"). *Health inequities* are specific intersectional concerns influenced by the social determinants of health. They are "health inequalities that are unfair or unjust and modifiable;" *health equity* by contrast "seeks to reduce inequalities and to increase access to opportunities and conditions conducive to health for all (Government of Canada)". The Government of Canada's 2018 *Key Health Inequalities in Canada* report produced seven principles on how to address health inequalities, including the following intersectional call to action:

> Both material deprivation and sociocultural processes that maintain privilege and disadvantage and inclusion and exclusion play important roles in generating and reinforcing social and health inequities. In addition to addressing material conditions, effective action on health equity must also include efforts to empower disadvantaged communities and tackle the harmful processes of marginalization and exclusion (e.g. systemic discrimination and stigmatization) embedded in hierarchies of power and privilege (Public Health Agency of Canada, 31)

Yet, intersectional, socially determinant-conscious approaches to public health policy and equity in Canada remain few (Hankivsky & Christoffersen; Hankivsky et. al). Moreover, the Canadian public is largely unaware about the social determinants of health, often only citing individual factors such as exercise or healthy habits when discussing the determinants of one's health. With this sole emphasis on individualism is often an associated morality; that those with better health made "better" choices than those with bad health (Canadian Council on Social Determinants of Health, 2). Such value judgements in turn fuel misplaced shame and stigma. A 2019 poll by Ipsos found that "75% of working Canadians would either be reluctant to admit (48%) or would not admit (27%) to a boss or co-worker that they were

suffering from a mental illness" - three times the frequency as compared to if they were admitting they had a physical illness (Ipsos).

In this landscape of interconnected health factors, wellness and wellness products thus arguably often fall short of accounting for these intersections of access, privilege, and identity. Examining the spending structure of the 'global wellness economy' is particularly revealing. $1,083 billion was spent on personal care, beauty, and aging in 2017; $639 billion was spent on wellness tourism. Comparatively, $575 billion was spent on preventative personalized medicine and public health (see fig. 2). The consumption of goods as a form of self care, without recognizing that lack of access to these goods is in and of itself a barrier to care, is steeped in unacknowledged politics. In the words of psychologist Isaac Prilleltensky:

> Power is pivotal in attaining wellness, in promoting liberation, and in resisting oppression...Once we accept that power and interests affect what we do, we reject the premise that interventions are not affected by politics, and that we just serve an uncontested higher ethical purpose. (Prilleltensky, 116-117)

Fig. 2. The composition of the global wellness economy overwhelmingly supports private luxury goods, as opposed to public social goods. *Global Wellness Institute*, "Global Wellness Economy Monitor", October 2018, https://www.dropbox.com/sh/f7refr3a4zawjpk/AADVJJJVzqDyz6ahozzcqDQca?dl=0&preview=globalwellnesseconomy2017_v2FINAL.pdf

If wellness products are inseparable from these overarching structures of power, what then is the role of the emotional or wellness game in this wellness ecosystem? How might questions of power, privilege, and society be addressed in this medium's relationship to these forces? These questions which would later expand into my research question proper, were first explored by myself in a separate game project called *ROOTS*.

Intersectionality & Radical Softness in ROOTS

ROOTS is an alternate controller game design collaboration made between myself and game designer Enric Llagostera involving intergenerational players in an experience that cultivates each other's capabilities for care within a larger community. Gameplay is both haptic and visual in nature, with players working together to grow an onscreen digital garden through an alternative controller resembling an underground roots system. Players first put their hands inside a soft padded "well" through holes in its sides (fig. 3). The game's digital garden inside the top of the well can then be grown and "watered" by connecting roots within the well's interior to a circuit based ground cushion. Each root has a different feel, texture and weight, with softness and tactility acting as invitations into new and unfamiliar learning spaces.

Fig. 3. Gameplay of *Roots*.

Alternate controls are means of signal input that vary from 'mainstream' or 'traditional' approaches. As opposed to a keyboard, mouse, or standardized game controller, alternate controllers (or 'alt-controls') include but are not limited to custom controllers, installations, and hijacked traditional controllers (Corbinias & Alternative Controller Hangout). In engaging the bodies and minds of an intergenerational audience through a novel tactility, this alternative form of "soft" game design engagement is intended to appear as a new – and equitable - opportunity for play. The earliest stages of *Roots* sought to determine how the game could consolidate play into interactions that supported a sense of community reflection

for players. Project logs kept on an open source *Github* document record these early brainstorming notes, with one entry summarizing the vision for the project as being

> …part messy, part mysterious, part organic in its fiction… a projected self for players but also of an "other" when played collectively...a metaphor for processes of self-knowledge... (Llagostera)

The process of care is a tender but uncomfortable interpersonal process. When moving below the surface of *Roots*, care as discovery becomes evident through play; where hands reaching blindly for soft control roots instead are likely to stumble into the hand of another player.

Using Radical Softness as a Weapon

A failure to address the socially determinant factors of wellness can marginalize vulnerable populations by allowing damaging stigma status quos to persist. The Mental Health Commission of Canada for example writes that

> People living with mental health problems and illnesses often report that the experience of stigma—from members of the public, from friends, family and co-workers, and even at times from the very service systems that they turn to for help—has a more devastating impact on them than the illness itself (Mental Health Commission of Canada, 22)

Addressing such barriers to health equity requires a multifaceted approach from multiple actors. Children and family health experts Halfon et. al further add that

> ...in order to reach a tipping point at which knowledge translates to action, we need to spread awareness of the social determinants of health beyond social scientists and health researchers. Policy makers, healthcare providers and families need access to comprehensive information about social risks that are prevalent in their communities and their relationships with health (Halfon et. al, 16)

A concept marrying the tangled notions of political action and emotional, personal experience is that of *radical softness*. Coined by artist Lora Mathis, radical softness is described as "a weapon", since "unapologetically sharing your emotions is a political move

and a way to combat the societal idea that feelings are a sign of weakness" (McLean). Within their larger analysis of haptic game design aesthetics used by queer artists and designers, Pozo writes that "the dynamics of radical softness in Mathis's work lie in the battle to maintain an ethic of healing and care while fighting daily experiences of patriarchal, racist, and homophobic oppression, as well as echoes of trauma from these experiences" (Pozo). Pozo also writes how radical softness has influenced works like *The Truly Terrific Traveling Troubleshooter*, a game by scholar-artists Jess Marcotte and Dietrich Squinkifer that invites players to explore gendered and social dynamics of emotional labor through alternating tacticility and interaction methods bundled in a custom suitcase controller (Pozo). In a game specific context, building with an unconventional lense of radical softness arguably can circumvent the passivity pitfalls of "emotional" and "empathy" games by drawing attention to why players are feeling, not just what they are feeling.

ROOTS uses a 'radically soft' game to discuss a facet of wellness - community care. Moreover, this same radical softness dissects notions of power in games through alternate controls. With my thesis I am seeking to provide novel and empathetic perspectives into a developing cultural phenomena, not as passive commentary, but as an exercise in active meaning building. To this end, I will seek to incorporate "radical softness" in the creation of my eventual game design.

Reflection: Why Games

Reflection is a critical concept within many scholarly areas, including learning and design studies respectively. Seminal learning theorist John Dewey describes 'reflection' as a "cognitive state that occurs when we encounter the unfamiliar and we must weigh our old preconceptions against some new problem for the sake of driving a change" (Dewey, 6). Change or challenge are able to make new cognitive connections, and new ways of understanding. For the design professional, this mental phenomena is a familiar part of their every day making practice. In *The Reflective Practitioner,* Donald Schön describes how reflecting-in-action and reflecting-on-action constructs the basis of professional knowledge. Iteratively making, observing the impacts of that constructed action, and then making again with this new insight is the basis of the professional's reflective learning cycle (Schön).

Just as the act of designing is a reflective practice, so too can design itself produce reflection in a person interacting with that design. In deliberately posing an instigating problem scenario to a user that requires reflection, a unique sort of openness to experience and

rapport for challenging convention is established; an environment for constructivist learning and meaning-making fostered. This reflection-as-method often crosses disciplines and intended audiences. The HCI field of *reflective design* for example actively employs "a set of design principles and strategies that guide designers in rethinking dominant metaphors and values and engaging users in this same critical practice" (Sengers et. al, 9). Augusto Boal's performance based *Theatre of the Oppressed* asks participants to act as active enactors of reflection for social change with its notion of 'spect-actor';

> At that moment she was at one and the same time, actor and spectator. She was spect-actor. In discovering theatre, the being became human. This is theatre – the art of looking at ourselves (Boal, 15).

Games (digital or otherwise) have similarly found themselves being used as a method for reflective purposes in a cross-disciplinary range of contexts. Constructivist educator Games Paul Gee has written about how digital games trigger reflection through player comparisons between game world and real world knowledge (Paul Gee). However, it is only very recently that a small number of scholars like Khaled and Marcotte have begun to explicitly interrogate what ingredients go into the construction of a deliberately reflective game design experience.

Many games have occasional moments of countering player assumptions and knowns for entertainment or mechanic relevant purposes. However, Khaled uniquely distinguishes between these moments of incidental reflection in games, and the deliberate practice of *Reflective Game Design* - "a new alternative design agenda from which to design, deconstruct and make sense of play experiences" (Khaled, 4). In these Reflective Game Designs, designers appear to be creating experiences that go against mainstream design wisdom in favor of novel and reflective interactions. To facilitate reflection, these games favor *questions over answers*, rather than always providing the player with direct and clear feedback; they *disrupt rather than comfort* the expected status quo; they are *clearly signalled as being reflective, rather than hiding* moments of learning; and they *reflect rather than immerse* the player in their presented interactions.

Of additional note is Khaled's observation that many of these reflective games fall within what might be labeled as artistic or experimental genres (15). Marcotte's in-depth analysis of five games 'queering' controllers in deliberate opposition to kyriarchal systems embedded in game design likewise notes this critical connection between experimentation and reflection.

"Common control schemes prioritize smooth, seamless experiences ... These norms within game design best practices tacitly support other hegemonic practices" (Marcotte). One example used by Marcotte is *rustle your leaves to me softly: an ASMR plant dating simulator*, a plant-based alternate controller game navigating consent and connection. Wires attached to the plant's soil detect leaf touches from the player, converting the electrical signal of these connections into gentle whispers audible to the player. Here, Khaled's four pillars of reflective game design are once again evident: *reflection over immersion, disruption over comfort, clarity over stealth,* and *questions over answers.*

Reflective Game Design in Humaning

One game that provides an example of how Reflective Game Design could connect to my thesis is *Humaning*. Humaning is a three player "interspecies tabletop RPG" created by game designer Kara Stone in which players work together to "create human life" (*Humaning*, Stone). At the start of the game players draw a figure of a human body on a large piece of paper. Then, each player chooses one of three game provided character roles working to make this human; bacteria, plant, or metal. Each character role is in turn associated with a unique set of traits and motivations. The "plant" player is told that "farming you was a major factor in the human turn to civilization;" "metal" is told that they "greatly effect the human's energy levels".

After character roles are chosen, a "group question" is asked to the players, which everyone answers in the spirit of their character (fig. 4). Based on these responses, the group determines who should answer an associated 'private' question. This selected person does not answer the private prompt out loud, but they instead draw a symbol representing their response inside the human body figure. Gameplay ends once all questions have been answered by the group.

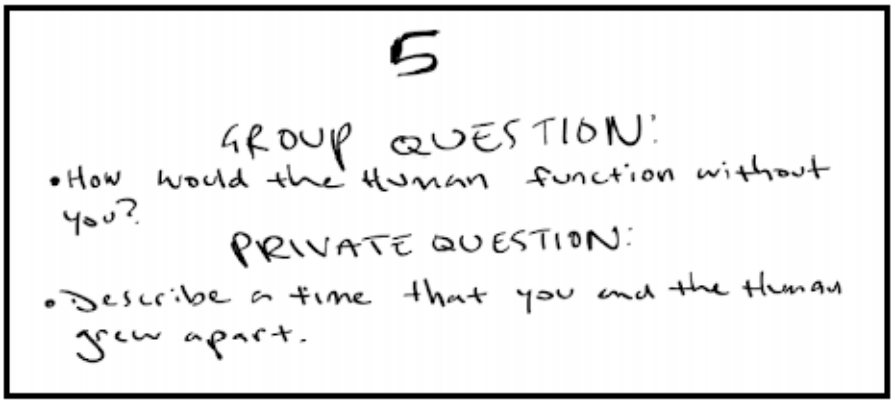

Fig. 4. Group and associated private question in Humaning. *Humaning*. Stone, Kara. PDF Game, https://karastone.itch.io/humaning. Accessed 1 Jan 2020.

Documenting Reflection on Cognitive & Embodied Knowledge

Humaning evidently embodies Khaled's four pillars of Reflective Game Design. The game *disrupts* comfortable roleplaying character conventions, asking players to consider the perspective of a bacteria, plant, or metal rather than a barbarian, priest, or mage. The descriptions of these character roles *clearly* indicate that the game is based on facts outside of the game. Humaning continually asks players to engage with *questions* as part of its main gameplay mechanics, with the ultimate purpose of *reflecting* player experiences back at them. Seeing that Reflective Games like *Humaning* and *rustle your leaves to me softly* connect to Khaled's framework prompt me to integrate it's design tactics into my own prototyping and methods.

Additionally, being able to have discussions between multiple stakeholders is an important intersectional game design feature to have in both my proposed project and in *Humaning*. One key way that *Humaning* supports and documents these discussions is by way of physical game materials that respond according to one's role perspectives. A symbol drawn in the human by the 'metal' character is very likely to look different than the 'plant' or 'bacteria'. *Humaning* induces both cognitive and physical player knowledge, with reflection on game materials and prompts providing a connection between ways of knowing. In my thesis project, I will integrate physical materials that support embodied, intersectional, and reflective player roles through appropriate adaptive responses.

Criticality: Why Play

A key concept connected to reflection is that of *criticality*. Criticality is what supports and moves cognitive reflection into the realm of assessment and subjective judgement. As adult

education theorist Mezirow writes: "reflection does not necessarily imply making an assessment of what is being reflected upon, a distinction that differentiates if from critical reflection" (Mezirow, 186). Perhaps unsurprisingly, criticality like reflection has been an important concept in the world of design, both as an individual concept and larger making manifesto. Critical Design was a notion popularized by designers Anthony Dunne and Fiona Raby, and is a design praxis of using "speculative design proposals to challenge narrow assumptions, preconceptions and givens about the role products play in everyday life" (Dunne & Raby). Notably for Dunne and Raby, 'critical' is understood not solely as critique in a pessimistic sense, but as a spirit of engagement and debate conducted through applied design.

Within game design, applied criticality has been further refined by the likes of Mary Flanagan and her writing on *Critical Play.* In leveraging the unique ludic properties of the games medium, Flanagan writes that "critical play means to create or occupy play environments and activities that represent one or more questions about aspects of human life" (Flanagan, 6). She argues in *Critical Play: Radical Game Design* that many (if not all) games are constructed with embedded values in them. From the Capitalism of *Monopoly* to the war games of Chess, games reflect social values, struggles, and politics. However, to design with *deliberate* critical play - to ask players to acknowledge or confront these social values - calls for a unique methodological protocol:

1. Set a design goal/ mission statement and values goal
2. Develop rules and constraints that support values
3. Design for many different play styles
4. Develop a playable prototype
5. Play test with diverse audiences
6. Verify values and revise goals
7. Repeat (Flanagan, 6).

Flanagan's proposed critical play process differs from traditional games making in that it asks the designer to iterate on a game's values early in the game making process, with diverse audiences, and with multiple play styles in mind. In contrast, traditional game development usually has a targeted audience and feature set in mind, with clear deadlines and (often financial) benchmarks for success.

Critical Play in The Deep Forest and The Quiet Year

A design challenge in my thesis is to incorporate perspectives besides my own. Game designers Avery Adler and Mark Truman present a unique case study of applied, iterative, and traceable critical play that does this with the shared universe games *The Deep Forest* and *The Quiet Year*. Both *The Deep Forest* and *The Quiet Year* are roleplaying map games, where players engage with various prompts and (not unlike in *Humaning*) trace their responses on a game map. *The Quiet Year* by Avery Adler was the first of these two games to be made. It puts players in a post-apocalyptic community struggling to rebuild and survive within one temporary year of peace. 52 prompt cards each correspond to a week of this quiet year in-game, and each card triggers a range of possible events that players must respond to. The end of the game happens once the year is up and the 'Fost Shepherd' enemy arrives. As the card deck of *The Quiet Year* is based on a standard deck of playing cards, each season is given its own suit (and own set of problems) that players must deal with.

A	What group has the highest status in the community? What must people do to gain inclusion in this group?	or...	Are there distinct family units in the community? If so, what family structures are common?

Fig. 5. The ace of hearts card in The Quiet Year happens during 'spring', and lets players choose between two question prompts.

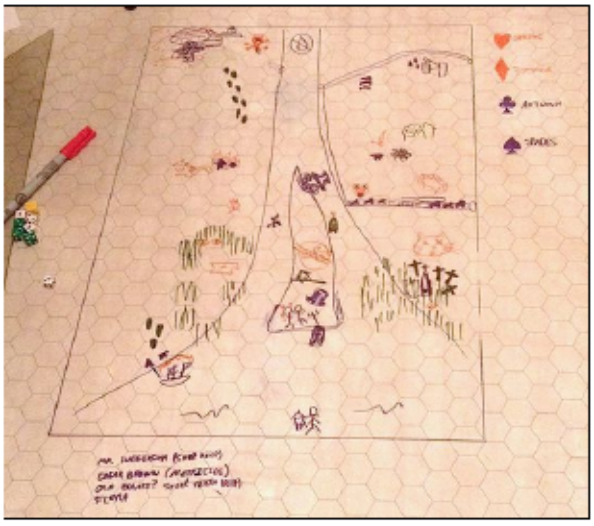

Fig. 6. An example of a completed board from "The Quiet Year." original_corPse. "The Quiet Year." 4 May 2005. JPEG image, https://boardgamegeek.com/image/2511969/quiet-year. Accessed 1 Jan 2019.

The Quiet Year was reimagined by Avery Adler and Mark Truman in *The Deep Forest* as a map game interrogating "post-colonial weird fantasy" ("The Deep Forest"). The opening narrative prompt of this title is similar to its predecessor, but now inverted. Rather than discussing "the struggles of a community living after the collapse of civilization, and attempt to build something good within their quiet year", *The Deep Forest* explores "the struggles of a community of monsters, trying to rebuild and heal after driving off the human occupiers" ("The Quiet Year"; "The Deep Forest"). In their design notes for *The Deep Forest*, Avery writes that this change of perspective began when they realized that *The Quiet Year* had been unintentionally replicating colonial narratives of ownership and 'claimed' land used to legitimize territorial occupation (*The Deep Forest*, 16). With this reflection, they also strove to investigate more directly how the labels of monstrosity and otherness were being reclaimed by members of marginalized communities on the quest for healing and self discovery, including among the trans and queer communities of which they were a part of.

Collaborator Mark Truman writes that it was not until *The Deep Forest* that he realized his identity as a Mexican-American game designer was something to acknowledge, reflect, and incorporate in his making; and that a lack of reflection of oneself prevents post-colonial healing and recovery. To this end, reflection became a core design goal of the altered game. As Mark Truman writes, "The Deep Forest is a mirror, one that reflects back what you bring to it, the roles you traditionally play and the conquests you traditionally attempt" (*The Deep Forest,* 17). Many of the core mechanics including the card based weeks and drawing map stay the same, but subtle alterations and refinements reinforce this new design goal. Rather than having a homogeneous society like *The Quiet Year*, *The Deep Woods* introduces an immigration mechanic, where the monsters must navigate the fractured nature of their community. Likewise, question prompts are altered to interrogate what it means for the monsters to incorporate human "artefacts" and remnants into their own society.

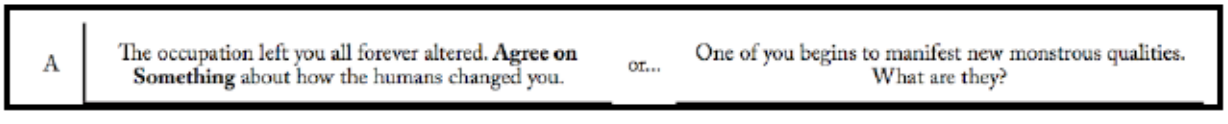

Fig. 7. The ace of hearts card in *The Deep Forest* also happens during 'spring', but the content of the card has been altered to reflect the game's new design goal perspectives.

Using Mapping to Trace the Play Journey

In both of these games, we see two core mechanics supporting critical play. The first is the use of a map based game system that involves players in its game board creation. Flanagan

writes that "artist- created board games... (provide) table- based mini laboratories for the examination of choice, chance, and social interaction" (Flanagan, 116). While Flanagan's quote is in reference to critical play artifacts that game players encounter, it follows that allowing players to create their own boards allows them to become their own authors of critical reflection and expression. "Mapping" as an activity on its own has also been found to be a facilitator of active learning in various contexts by engaging users in a process of visual learning (Willis & Mierstschin). Various sorts of "mapping" activities (such as "mind maps") remain staples in the designer's toolkit for this very reason. The second activity which *The Quiet Year* and *The Deep Forest* use to engage the player in Critical Play are its question sets. Like *Humaning*, it gives players choice in how to engage with them, but in this instance using two question options as opposed to public and private response formats.

While *The Deep Forest* designers did not explicitly say that they employed a Critical Play methodology, it is clear that the general concepts of Flanagan's model could be applied here. Value refinement, diverse input, and redesigns here support criticality, intersectionality, and reflection, as I am likewise striving to do. This case study also highlights how value discovery can be a surprising one. It was only after Avery created *The Quiet Year* that they realized that the notion of 'community' had more complexities to address. As other actionable insights for my project, I am encouraged to incorporate aspects of physical mapping and group-based production of meaning in a community setting. Moreover, questions seem to remain a powerful reflective and critically reflective game mechanics to consider.

Participation: Why Play Together

We have arrived at a working understanding of Reflective Game Design, Critical Play, and radical softness as it applies to my game-centric research question, "*What is the feeling of wellness, and how can one play with that feeling?*" However, there is a final notion in need of addressing before I may begin to define my research methodology: what sort of game *play* best facilitates these interactions? Looking at the cited game examples thus far yields an array of overwhelmingly *social* and *physical* play experiences, but will this be true in my research case? A notable fact is that for the majority of their invented history, games have been designed as social experiences. Apart from a few games like Solitaire or a Sudoku, rarely do non-digital games present themselves as single player experiences. Many key theorists on play and games including Caillois,[1] McLuhan[2], Mead,[3] Bateson,[4] and

[1] "Summing up the formal characteristics of play we might call it a free activity standing quite consciously outside "ordinary" life as being "not serious"." (Caillois, 4).

Sutton-Smith[5] discuss the role of other players, society, and/or culture in making a game. Given that my research interest explicitly connects to social issues outside of the to-be-produced game, it seems prudent that how I present game play too needs to be social and outward facing.

Adults - the target demographic of my design - have particular motivations and uses for play. So too do they have different attitudes with playing with others. Unlike children, an adult may be skeptical of discussing one's feelings with others. As part of my radically soft approach, this skepticism *is why* I want to ask people to do so, but it does not answer *how* I will do so. I again look to the physicality of my aforementioned game examples, which repeatedly have players interacting with physical rather than digital materials. I believe that even if an item of critical scrutiny in this project is the wellness or emotional videogame, the use of physical game materials will be an important part of circumventing expectation, and therefore, experience resistance. In a deeply emotional and sensitive research project, game designer and researcher Sabine Harrer worked with four grieving mothers to develop a videogame called *Jocoi* about pregnancy loss. Although the women were initially skeptical of the videogames medium being 'for them', physical prototyping workshops conducted with the mothers reduced this attitude. The mothers used art and craft materials to construct symbolic representations of their mother-child relationships, making planets where they imagined their children living (Harrer, 219). While Harrer would go on to adapt these creations into a digital medium, the crafting of these planets established a common metaphor among participants that on its own could have arguably advanced a physical game project.

A final dimension to consider in relation to social interactions and my project is not only the role of participation during play, but also during the *making* of play. Flanagan writes that "critical design methodology requires the shifting of authority and power relations toward a nonhierarchical, participatory exchange," and Khaled similarly points out that "deeply reflecting on a game experience requires engagement with levels of game understanding and complexities of insight approaching that of the game's designer" (Flanagan, 256;

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[2] "Games are popular art, collective, social reactions to the main drive or action of any culture." (McLuhan, 258).
[3] "The game is then an illustration of the situation out of which an organized personality arises." (Mead, 73).
[4] On meta-communication Bateson writes: "The point is that the purpose of these conversations is to discover the "rules." It's like life—a game whose purpose is to discover the rules, which rules are always changing and always undiscoverable." (Bateson, 3).
[5] "A game is what we decide it should be." (Avedon & Sutton-Smith, 7).

Khaled, 24). Designers like Harrer are engaging with this belief through Participatory Design practices, wherein the "user" of a game is not a passive recipient of an experience, but an active co-constructor. While game hardware, financial, or other limitations may still need to be considered on the part of a project forerunner, these alone do not necessarily exclude participation from a game co-creation experience. Khaled and Vasalou describe how they used a system of 'scaffolded' prompts to involve children in the co-design of an educational game teaching conflict resolution (Khaled & Vasalou). When parts of the game's design goals and limitations were given to a group of children, the researchers found that the children were much more able to imagine a viable game idea - and, one that also reflected their own thoughts and beliefs.

Participatory Design and The Feeler Reflection Game

Incorporating other people in my project that moves beyond social gameplay requires a deeper look at how other researchers are using Participatory Design and games. *The Feeler Reflection Game* is a board game that was utilized during the development of an ongoing and larger research project called *Feeler*, a learning performance and wellness tracking software. *The Feeler Reflection Game* prompts players to interact with a number of fictional university student personalities who need help with self-monitoring, with the goal of the game being to help these characters increase their learning performance by recording wellness dimensions like physical activity and sleep. This analog version of *Feeler* served as a form of contextual inquiry for the researchers, with the recorded interactions and interview statements serving as empathetic records of how *Feeler's* end users related to the proposed design interactions (Durall et. al).

Fig. 8. An example of the game's design. Durall, Eva. "Feeler Reflection Game." *evadurall*, JPEG image, https://evadurall.com/e0/portfolio/feeler-reflection-game/. Accessed 1 Jan 2020.

What the authors found was that the game's use of storytelling, personas, and scenarios fostered a sense of empathy and connection to the proposed situations. This empathy, in turn, led participants to feel comfortable enough to give the researchers important and candid feedback for their future design directions. However, while the game served its intended purpose as a form of contextual inquiry, participants noted that the game as "a game" had some shortcomings; that "it was necessary to improve the game playability" (Durall et. al, 355). For example, play sessions felt too short, and the choices in the game seemed to lack emotional impact. The participating players were described as improvising and adapting the game as they saw fit;

> At some point, they also considered it necessary to rearrange the order of the board squares, since, from their point of view, some decisions, such as the definition of the research question, should be approached at the very beginning of the process (Durall et. al, 354)

Using Participatory Design as Rich Data Collection

While the *Feeler Reflection Game* seems a promising reiteration of the power of games to facilitate empathy, its status as a game lacked further investigation. For my project, I am driven to ask; how would including participatory voices in the creation of a physical game influence my research question? Would the creations of participants support what devices we have seen being used in reflective, critical, and social game experiences? In order to test this and my other raised questions, the following outlined research methodology will seek to incorporate radical softness, Reflective Game Design, Critical Play, and Participatory Design.

Physical Game Design: Synthesizing Research Into Creation

In constructing this theoretical framework, it became evident that many relevant game design works were physical (non-digital), experimental game designs. This thesis also employs physical as opposed to digital methods for several reasons. In addition to the above outlined design strategies of mapping, participation, embodied knowledge, and reflective materials afforded by physical game design, limiting materials to analogue ones in the participatory research phase of this project meant that participants could spend time ideating, rather than learning a new technology. It also meant that the participant's design process, reflection in- and on- action, could be more easily traced with "in-between"

boundary object[6] prototypes as opposed to a static end game artifact. Finally, as participants had expressed having varying levels of knowledge about digital game making technologies, attendees were more likely to be on a level playing field with the analogue materials.

The decision to focus on physical game design also holds a larger conceptual purpose relevant to my research questions on wellness. Making something more akin to a "sketch" of a wellness game than a market-ready game is arguably a more evocative way of generating new ways of thinking about wellness. In their writing on evocative design, scholars Waern & Back write that

> ...The emphasis on trialling specific design factors can come in conflict with the designers' desire to also make an interesting and attractive game. This is less of a problem in evocative design experiments as these are smaller and also often done early, as part of the design process for a larger game. In full-scale design experiments, this can lead to conflicts within the research group as well as cumbersome compromises in design (Waern & Back, 165)

Physical prototyping allows me to experiment in novel ways that this genre tends not to do. It is by facilitating the most basic acts of wellness-facilitating gameplay possible that I aim to create findings of interest to future and more complex game designs, digital or otherwise.

[6] "Boundary objects are a sort of arrangement that allow different groups to work together without consensus…"work" is also a word that stretches, and should, to include serious play endeavours" (Star, 602).

Chapter 3: Research Methodology

This thesis employs a three phase research methodology. Phase 1 involved participatory workshop data collection, and sought to better understand how players interact with wellness concepts through play. Phase 2 then took this data and expanded its findings through my self-directed iterative prototyping that incorporates Khaled's Reflective Game Design, radical softness, and Flanagan's Critical Play methodologies. Phase 3 finally synthesized prior analysis and prototyping into a final, publicly disseminated game design.

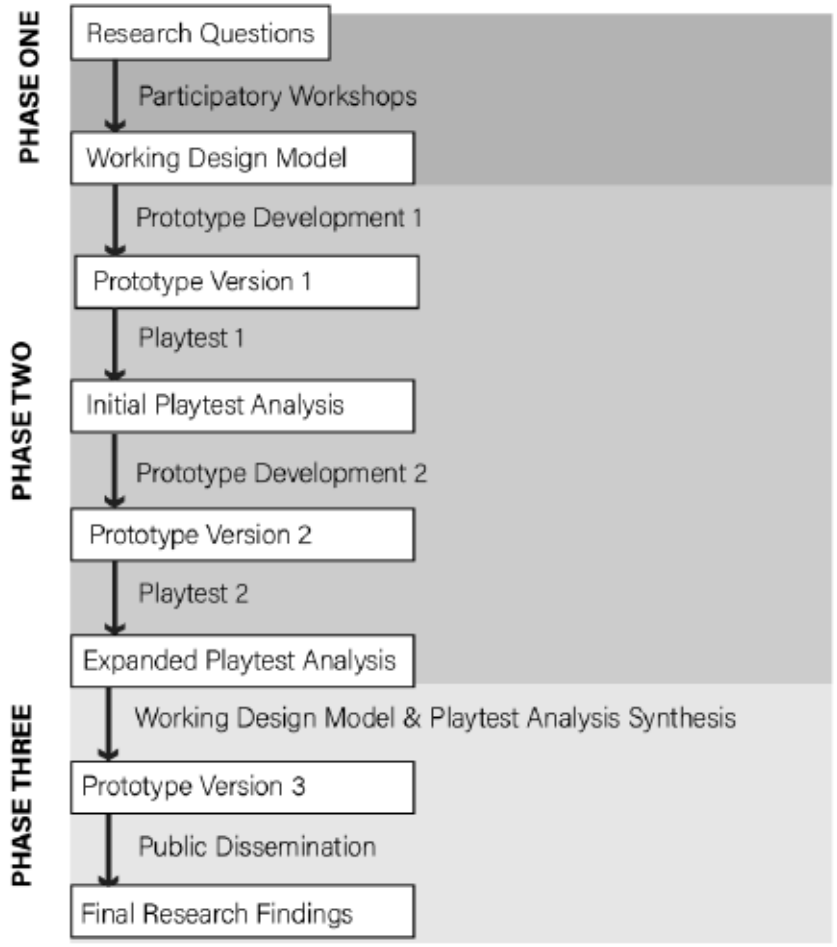

Fig. 9. Overview of this thesis's research design.

Phase 1: Building a Working Design Model

The Phase 1 component involved the design, running, and analysis of three original participatory workshops to see how players might express wellness concepts in a playful, social environment. Eight Concordia students were involved in Phase 1. All participants described themselves as having some base familiarity with games and videogame *playing*

prior, but prior *game design* experience varied from none to advanced. These participants were recruited through Concordia's Technoculture Art and Games Lab (TAG) and the Concordia Fine Arts student communities. Over three weeks of communication, brainstorming, and dialogue, qualitative design data in the form of surveys, photographs, personal journal notes, and end game artifacts were collected from co-design activities conducted with the participants.

Phase 1 of this project notably embodies participatory and intersectionality informed design methods. It builds on the aforementioned reflective work of Harrer, as well as Khaled and Vasalou, who set a strong precedent for using participatory workshops in group based game design. Participatory design workshops "engage participants, often non-designers, in intense creative activity usually centered on assigned problems" (Martin & Hanington, 63). For this thesis, they also were an appealing method due to the potential for solidarity and community building in the face of a potentially "stressful" problem.[7] In this project participants were provided with physical prototyping materials, although they were not exclusively limited to planning a physical game design. They were given ample paper, markers, toys, and other game bits to construct their own game boards and game-playing device prototypes. Given the previously examined case study games, it seemed plausible that participants could make a meaningful project addressing wellness with physical materials.

The workshops were further informed by the "scaffolded" structure proposed by Khaled et. al in their participatory project designing serious games with children. In their case study, it was found that incrementally introducing their young participants to game design tasks helped to confine the scope of produced game ideas, while also affording for greater agency and creativity by using participants' existing procedural expertise. I hypothesized that a scaffold-like approach where everyone was introduced to the goals of the game at the same time could help make a potentially difficult subject matter more appealing; ease anxieties about being perceived as having novice game designer skillsets; and give people unfamiliar with one another a common problem solving starting point to collaborate on. Each workshop introduced several key game design concepts, and each workshop built up on the lessons and discussions of the previous. Given the age of my participants (adults), I applied a somewhat less directed "outcome" goal than what Khaled et al. used. My participants were

[7] Notably, two participant spouses were organically invited to the workshop sessions through their student partners. While this thesis is limiting its analysis to what the students produced, the fact that the students felt comfortable enough to invite them seemed to be an informal indicator that a sense of community was established.

given the following initial design objectives to work with: **a) Make a game helping people cope with stress**, and **b) Make a social game.**

Notably, guideline a) varies significantly from the game production output in Phase 2, where 'wellness' is at discussion as opposed to 'stress.' This evolution was for several reasons. First, at the time of designing the workshops, a cursory literary review had found that difficulty dealing with stress was a common self-identified adult wellness issue that could benefit from community support (Statistics Canada). Secondly, I had hypothesized that because stress is such a uniquely experienced phenomenon, there would be opportunities to incorporate intersectional concerns into our group discussions and (eventual) game outputs. While the general discovered wellness interactions from Phase 1 would remain applicable, the label stress would ultimately transition to wellness when Phase 2 playtesting revealed that stress carried an overall negative connotation to a game *playing* experience, as opposed to a game *creating* experience.

Participants were considered and treated as "experts" on their lived experiences with stress. They were provided the opportunity to document these experiences through journaling and photo studies methods. In design, journals serve as "guiding artifacts … for collecting information from participants across time, sampling their thoughts, feelings, or behaviours at key moments throughout a day, week, or month" (Martin & Hanington, 66). They acted as a debriefing activity between workshops, and helped to provide additional context to the images created through their self directed photo studies. Photo studies are another exploratory design method for "understanding the world of users" (Martin & Hanington, 134). They can be particularly powerful for addressing participatory concerns, given they act as a dual tool for needs assessment and participant empowered education (Wang & Burris). Both the journalling and photo studies were given as optional activities, but most participants engaged with the prompts and shared their results with the group during a pre-activity discussion at the beginning of each workshop.

Digital logs summarizing the workshop and eventual prototyping sessions were kept on an online Github account. Github is normally used as a tool for storing computer code repositories, and has been used in previously research to document digital game design development (Khaled et. al). However, for this project, the repositories were formatted to provide the reader an indexed overview of the project development. These logs included sketches, personal reflections, early session analyses and general ideations. Given the

importance of understanding the trajectory of possible design spaces in design research, these records allowed me to continually revisit and refine my progress through reflection in-and on-action. I was also able to share these materials with the participants, so that they could follow along with the project after the end of phase 1 and their active involvement.

In order to turn the workshop data into something that I could design with, three main data sources produced during the workshops were used in a grounded theory analysis that could be applied to my future prototype designing. First, the group value sheets (appendix 3) constructed in Workshop 1 and the group rule debriefs from Workshop 3 were revisited and condensed into a series of open codes that summarized their unique content into single keywords. These codes were then compared to one another and across teams to create collections of similar codes as concepts. These concepts were again compared to generate theory concerning the core goals and concerns of the participants' designs. Once this theory was generated, it was examined in light of its corresponding end game artifacts created in Workshop 3, in order to see what interactions the participants had used as support to this theory.

Phase 2: Iterative Prototyping and Playtesting

Phase 2 of this project involved two major rounds of development on the *ColorFull* game, with playtesting rounds conducted after each produced game iteration. Recruitment for these playtests was done through the TAG lab community network, and participants from phase 1 were additionally invited to participate in playtesting. Eight individuals participated in the first round of phase 2 playtesting (four were prior workshop participants), and four (one a prior workshop participant) attended the second. The methodological notion of *playtesting* used in this thesis is informed by the writing of Katie Salen and Eric Zimmerman, interaction and game design scholars and authors of the seminal game design text *Rules of Play*. They frame playtesting in a game-specific version of iterative design;

> Emphasizing playtesting and prototyping, iterative design is a method in which design decisions are made based on the experience of playing a game while it is in development...Why is iterative design so important for game designers? Because it is not possible to fully anticipate play in advance (Salen & Zimmerman, 11).

It is critical that playtesting occurs early in the design process, even before a complete game product is created. Likewise, having staggered playtesting sessions throughout the

development process allows the game designer to intervene on a design before it is completed.

Playtest 1

After an initial introduction to the research process thus far, participants were asked to playtest the first *ColorFull* game prototype. This early test was aimed at gathering information about how players interacted with different game board materials, as well as how they understood first draft game rules. In order to collect this data, two methods were used: a post-playtest *questionnaire* (appendix 1) answered privately by the playtesters, and *semi-structured qualitative interview questions* (appendix 2) asked publicly to participants both during and after gameplay. Both of these methods are survey methods used for the "collecting of self-reported information from people about their characteristics, thoughts, feelings, perceptions, behaviours, or attitudes" (Martin & Hanington, 172). As will be discussed further in Chapter 4, this information was invaluable to determining what would be the final rule and gameplay framing needed for *ColorFull*. Questions were largely directed at determining if Reflective Game Design principles (and Critical Play by extension) were emerging. Another **grounded theory analysis** with the **survey data** helped me to understand why discrepancies happened between the predicted workshop model, and the actual playtest model.

Playtest 2

The second playtest was conducted with a smaller group of participants in order to collect more specific feedback about the second *ColorFull* game design ruleset. The same semi-structured interview question script was applied as a method, but in place of questionnaires, this playtest employed *video observation*. Video capture of the participants engaging with and describing the game rules meant that this qualitative feedback could be analyzed for evidence of Reflective Game Design and Critical Play. This testing enabled me to produce both a viable game prototype addressing my research concerns, as well as produce a novel synthesis of the above mentioned theoretical approaches.

Phase 3: Synthesis & Dissemination

Data from the playtests was used to update the original grounded theory findings, and final minor playability adjustments were made to the prototype. This final version of the game was publicly displayed at Concordia's *4th Space*, where public reception and interactions with the game helped produced final conclusions on the research questions.

Chapter 4: Exploratory Research

From the literature review of Chapter 2, it follows that wellness is a complex phenomena that lies within concentric circles of access, experience, and privilege. Before beginning to create a game of my own making, I thus sought to engage with other opinions and experiences than my own to better understand and elucidate the phenomena of wellness. This engagement was done through a series of three participatory design workshops, where the wellness concept of "stress" was used as a common experience for discussion and elaboration. The goal of these workshops was not to necessarily change participant's ideas about stress, but rather, to allow them to express their experiences and - when it was helpful for them - to use provided theory as a scaffold for expressive and reflective making.

Workshop 1

The three workshops that supported this exploratory research phase were intended to incrementally introduce participants to game design topics, as well as permit design iteration of their proposed games. However, before jumping into design activities, it was important that everyone establish a base familiarity with one another. During a short meal period I introduced myself and my research interests, before everyone gave introductions around the room. When we were finished, the first session officially began with a short overview of Reflective Game Design, and why this approach is interesting for designing, deconstructing, and making sense of play experiences. The four general themes of Reflective Game Design were shared. *Stress* was also used as an example of a health inequity, with the framing of "something that we all experience as a biological survival mechanism, but the things that can cause us stress (stressors) vary based on our intersectional experiences, which in turn have the potential to cause unjust health inequalities" (excerpt from workshop script). The overarching participant goal for these sessions was framed as *designing a social game to help people cope with stress.*

Fig. 10. A slide from workshop 1 that was used to help introduce the design guidelines

The game of tag was used as an example for the participants to learn the basic building blocks of games; rules. *Verbs* were also shown to be a helpful way of framing in-game actions, such as the *running, tagging,* and *catching* that happens in tag (fig. 11). Participants were also challenged with the warm-up question- *could we make tag more reflective?* Once everyone was at a base familiarity of game principles, the participants were divided into two groups (referred to hereafter as 'Group A' and 'Group B') in order to brainstorm their *values* for the to be created game per Flanagan's Critical Game Design methodology (fig. 12). These values began as an individual exercise, with participants using provided sheets to write down things that they personally thought were important to include in the project. Then, they shared these values with their team members to create a group list of values. The idea of this exercise was to both value the individual participant's responses, and to engage in early collaboration and discussion with the values of others. The final tasks of the day were for participants to figure out the logline (one sentence description) for their game idea; figure out the main mechanics and rules they wanted in this game; and to figure out what pillars (foundational values, themes, etc.) would be core supports for this game.

Fig. 11. A slide from workshop 1 that was used to help introduce game design ideas

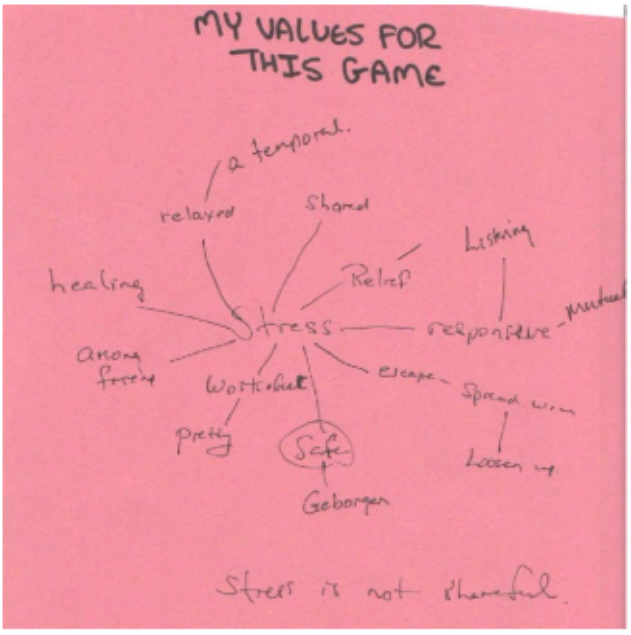

Fig. 12. Participants first brainstormed their own values, before working as a group to create a united set of values.

Group A described an active game where players would take turns sharing stress through an expressive medium like writing, drawing, or singing. The game would have a sort of cross between the creative expression of pictionary and the choices afforded by truth or dare. Players would use an object passed around the group as a talking tool, so that others without the object had to pause and pay attention silently to the holder. Given values for this game were simplicity, emotional safety, and empathy (fig. 13). Ultimately, the game was

hoped to act as a positive loop that would make its players feel increasingly comfortable in expressing stress with others.

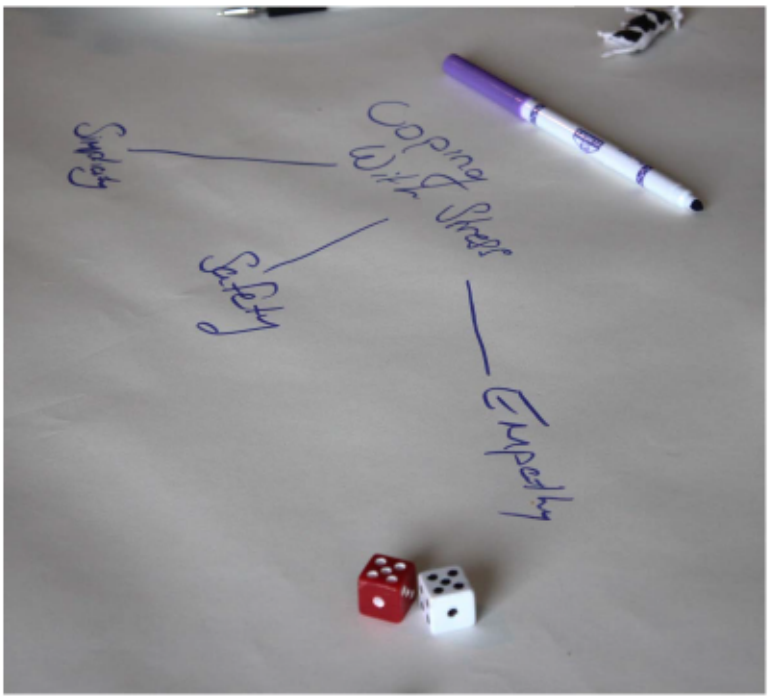

Fig. 13. Participants in Group A brainstormed around the values of simplicity, safety, and empathy

Group B described "a game where your stress is your individual game board," where players would draw representations of their stress in order to create their own game map (fig. 14). In their different sizes, colors, and shapes, the drawings would be given different 'weights' that also correspond to color coded dice. Participants suggested that perhaps the movement around the game board would be aided by storytelling prompts or some system of accrued tokens. Critically, all players would have to work together in order to 'leave' this stress map. Pillars for this game were given as being cooperative stress management, being "a dash of art therapy", community, lived experience, commiseration & support, being personal/personalized, stress relief, and disruption.

Fig. 14. Group B imagined used a drawn game board (the orange sheet) early on in their prototype

Both groups were ultimately able in this first session to produce a broad framework for future iteration (fig. 15). However, some participants were having trouble understanding the presented theories, and see why they might be interesting to game designers. To reduce abstraction, a deck of positive stress coping and stress symptom cards was given during session 1 to make stress coping and wellness reflection tangible. Through group discussion, the research was reframed as a roadblock shifter rather than content to deliver to players. The participants finally left the session with a 'homework' activity, wherein they would take photos of objects that they associated with stress (in a positive or negative sense) that would hopefully promote creative thinking and reflection in the next session.

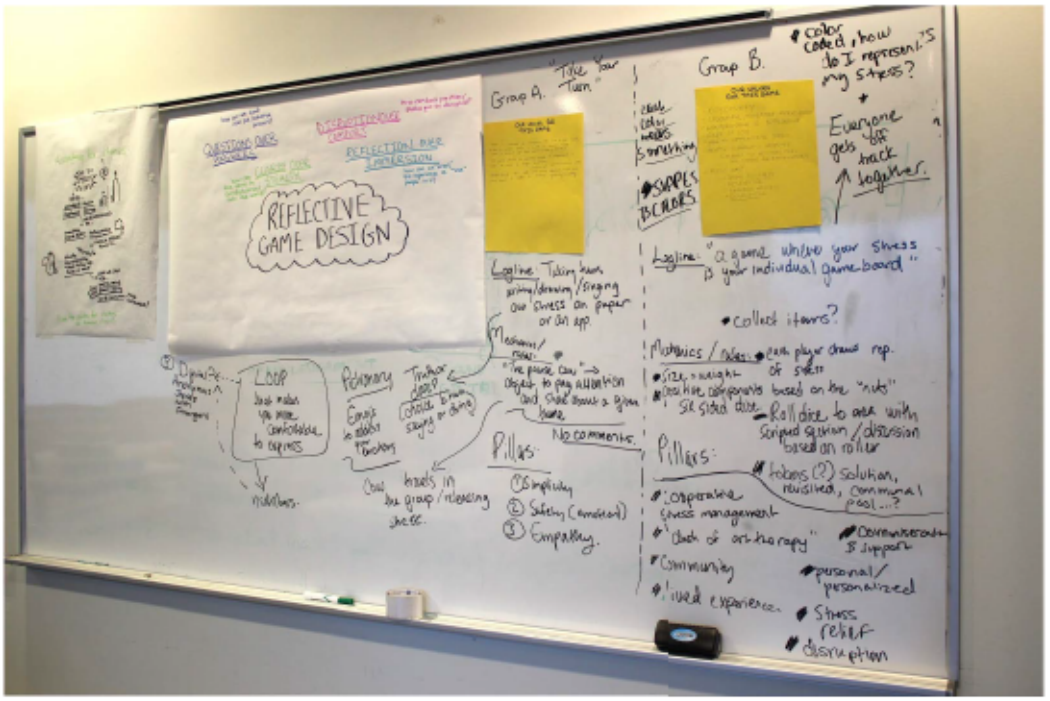

Fig. 15. At the end of workshop 1, groups reviewed their progress and the design goals so far.

Workshop 2

The workshop opened with a review of the participant's photo studies homework projects (fig. 16, 17, 18). Many people seemed to find time, and the associated worries that come from having more or less of it, stressful. Some other individuals made specific observations about their physical stress symptoms, and others still captured examples of positive things they did to cope like playing games or reading. The ways people experienced stress as exhibited in the photos were sometimes similar, but often different or unique depending on the individual's situations. The participants also agreed that they were often readily capable of figuring out how to address the stress, but the difficult part of the problem seemed to be that addressing the stress was still often associated with negative emotions. After this creative and introspective warm up, we briefly revisited the group's previously started game rules and values. The workshops operated on a system of low stakes, 'come when you can' availability, and we needed to catch some new visitors up to the rule and workshop progress form the week prior. This check in gave newcomers the chance to add their perspectives to the values progress as well.

Fig. 16. One of the participant's photo studies that represented stress connected to 'time.'

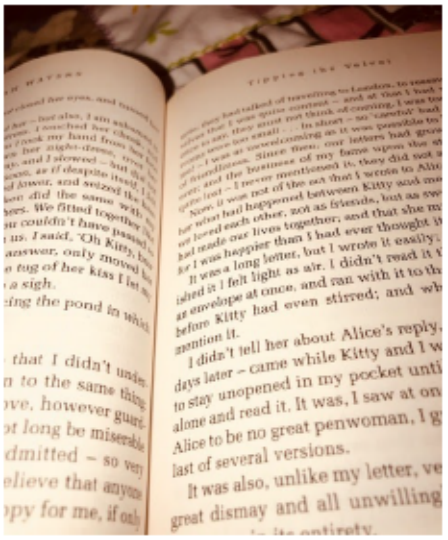

Fig. 17. Reading was given by one participant as a strategy for relaxing.

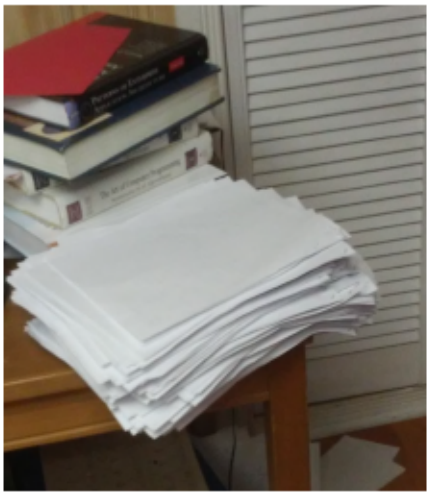

Fig. 18. Deadlines and work stress were represented by this pile of papers for one participant.

I then led the group into our second introductory game design lesson, this time reviewing the usefulness of paper prototyping in design. I outlined why low fidelity prototypes are often a useful, cheap, and fast production method for game designers looking to quickly test an idea [8]. I likewise mentioned how they can help us think about our game's *flow*,[9] *balance*[10] (or imbalance), *game loops*,[11] and other key play elements without the investment of time or the extra polish of a final project. Everyone then took the last hour to develop their ideas further, creating a draft ruleset and descriptions that would be used for wrapping up their prototypes in the last workshop. The session once again closed with a group check in, and a final 'homework' assignment where people could again use photostudies to hunt for stress objects, or they could bring in the object to discuss with the group.

Workshop 3

The 'homework' check in discussions were very similar to Workshop 2 (fig. 19), with the exception of one participant who brought in a physical storytelling object (fig. 20). Afterwards, the remainder of the time was used for participants to finish up their rules, prototypes, and descriptions that would be shared at the end of the session with the other participants. Given that some of the participants were unfamiliar with creating rulesets, prior to this workshop a "draft" ruleset had been constructed based on Workshop 2's discussions. This rulesheet was to be modified and reorganized as needed by participants (fig. 21). Ultimately these seemed to be less useful for describing precisely how the participants imagined the game to be, but rather good for helping them to realize what they *didn't* want the game to be, with people generously scratching out and scribbling on the draft sheets. The concluding group game review discussion was grounded by the following prompts: "Describe your game's goals, gameplay, materials, rules and any other key information... Describe how you see the game expanding / growing in the future, and... ask one question

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[8] "Early prototypes are not pretty. They might be paper versions of a digital game, a single-player version of a networked experience, hand-scrawled board and pieces for a strategy wargame, or a butt-ugly interactive mock-up with placeholder artwork. Still, the prototype is more than an interactive slideshow-it is a genuinely playable game that begins to address game design challenges of the project as a whole." (Salen & Zimmerman, 1)

[9] "What exactly is flow? Csikszentmihalyi suggests that flow is something we have all experienced. It is a feeling of being in control of our actions, masters of our own fate. Although rare, when we achieve a state of flow we are deeply exhilarated... In many ways, the heightened enjoyment and engagement of the flow state is exactly what game designers seek to establish for their players." (Salen & Zimmerman, 8-9)

[10] "Essentially...(balance) means that winning a game should be a function of player skill plus any element of randomness or luck that the game employs, but should be unrelated to the game's initial conditions." (Egenfelt-Nielsen et. al, 153)

[11] "*Core Gameplay Loop* is the principle that video game designers must clearly, carefully define, and then they must refine the central, recurring mechanics that provide the foundations of the play experience. The core gameplay loop is the central building block of a game's design." (Acosta et. al.)

to the presenting group." These grounding questions were used to elaborate the group's game concepts, and in turn form a substantial component of my Grounded Theory analysis data (appendix 5) used to create a model of the participant's creative propositions.

Fig. 19. Another clock image, representing worries about having enough time to do work.

Fig. 20. One participant brought a Rubik's cube that they used to destress. The physical object seemed to spur people's memories of objects they also used for stress coping.

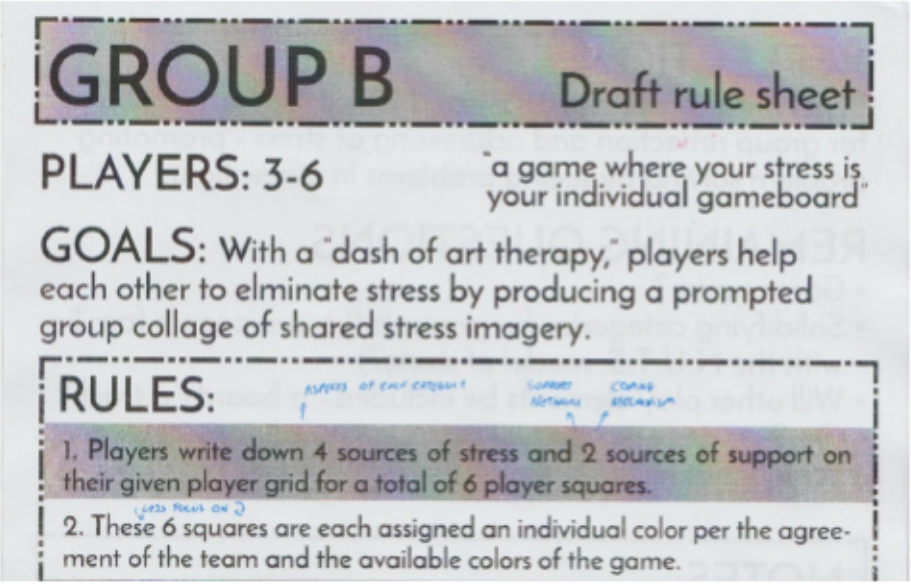

Fig. 21. Draft rule sheet and corrections (blue pen).

Group A Game Summary

Group A created a game that was generally consistent with the ideas proposed in Workshop 1, with the exception of new instructions guiding how the game's stress related prompts were to be talked about. The game was built around the pillars of *empathy, simplicity,* and *safety*, which also acted as the inspiration for three different suits of cards (fig. 22). At the beginning of the game these cards are shuffled and evenly dealt between the players, and put on the table face down. On each card are two possible prompts that match that card's particular theme. For example, *empathy* card offers players a choice of the following prompts: "Hold hands as a group"; or, "What was your last week('s) trouble? When was the last time you cried?" On their turn players draw one of the cards from their pile, and decide to either do that card's prompts, or pass the card on to someone else. The collective goal of the game is to get through all of the cards together.

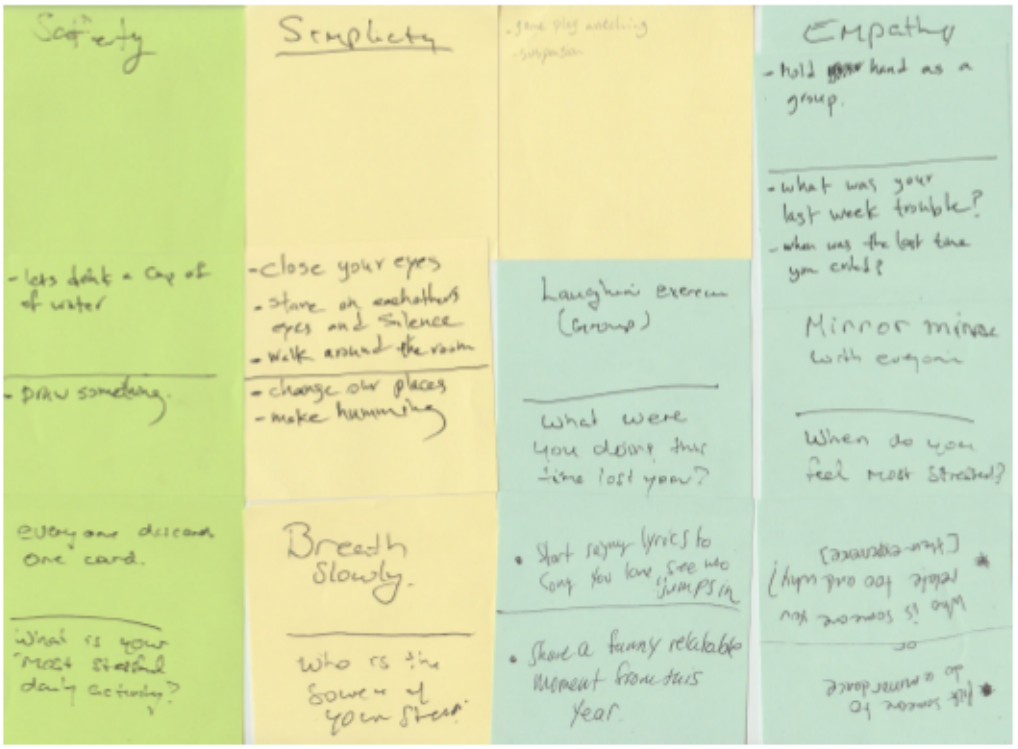

Fig. 22. Scans of the player created cards. Green are safety, yellow simplicity, blue empathy.

Group B Game Summary

Similar to Group A, Group B created a final prototype that was clearly connected to the brainstorming of Workshop 1. Group B also created a game with a collective spirit, wherein players must collaborate with each other to achieve a common goal in order to win. In their final game a color coded index was substituted in place of dice to describe a combination of stress causing factors, support networks, and coping mechanisms (fig. 23). The color of the items on the index matched a set of markers players use to build a gameboard. Gameplay begins with players drawing 'stress tokens' on graph paper using markers that match the subject of some stress they wish to present. For example, one player drew a blue computer matching the blue index color for 'coping mechanisms,' because they tended to play video games to relieve stress. After everyone has drawn their stress tokens, they cut them out and put them into a pile. These individual representations of stress get added to a collective game board whenever a prompt card is addressed in the game, or whenever someone else is able to support or commiserate with another's stress token. The game is over when all the player drawings are integrated into the game board.

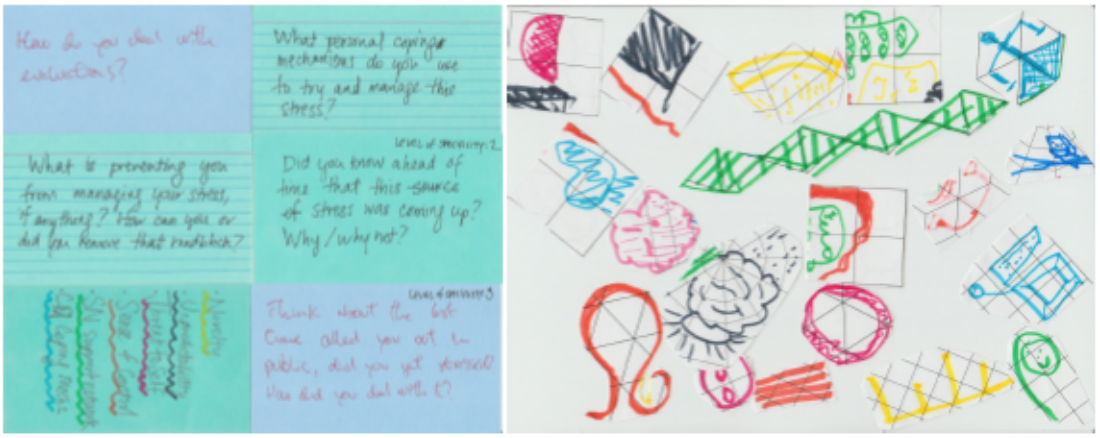

Fig. 23. Scans of the player created cards and tokens from their playtest.

Grounded Theory Analysis

The goal of these sessions was to better understand how the participants modelled 'stress' through play, so that a more generalizable model could be applied for my own game based wellness exploration. This distinction is where my Grounded Theory analysis proves useful. Grounded Theory (GT) is "a general methodology for developing theory that is grounded in data systematically gathered and analyzed" (Strauss & Corbin, 273). It involves organizing qualitative data through codes, grouping codes into concepts, creating categories from these concepts, then finally creating a working *theory* for the data's findings. GT is a particularly useful method in my case due to the method's room to revisit and re-code data as new findings emerge. Both grounded theory and design are also processes of observation based, inductive reasoning. Rather than starting out with a hypothesis, GT enables me to construct one from the process of refining my observed data. In my case, the group value sheets (appendix 3) and the end group rule discussion notes (appendix 4) were used as the sources of data to be coded. I aimed to understand how participants were talking about their projects throughout their making, to glean why they felt their games were effective, and/or what motivated them to design in a certain way. By including samples from the beginning and end of their making process, I would be able to account for potential changes in opinion throughout the prototyping process.

The examined data produced four general categories of meaning that were designated with the labels of *inner space, external space, game space,* and *possible space*. 'Inner space' category codes reflected participant's introspective concerns about emotions, sentiments, individual perspectives and values. Comments like "*stress* is because *you* care about something" were heavily coded in this way. *External space* codes by contrast reflected

awareness of some other person's space, or the connection one has to another. "larger audience"…"communicate"…"community oriented" are all examples of comments coded in the external space category. The *game space* category was perhaps the most practical or direct of the four, discussing the design process, desired interpretation, and use of the project. "colorful"…"game should be"…"cards ask about"… Finally, *possible space* was used to store the ambiguous words that were arising in the participant's discussion of their projects. There seemed to be repeated reflections of life uncertainties, stress's changing dependencies, or otherwise variable factors that could influence the game in their responses. Phrases like "one form or another"..."restriction"... "ability"..."change the environment"... were coded in this 'possible space' category. From this analysis, I was able to produce a working model that represents how participants were framing the spaces of their play interactions (see fig. 24 below).

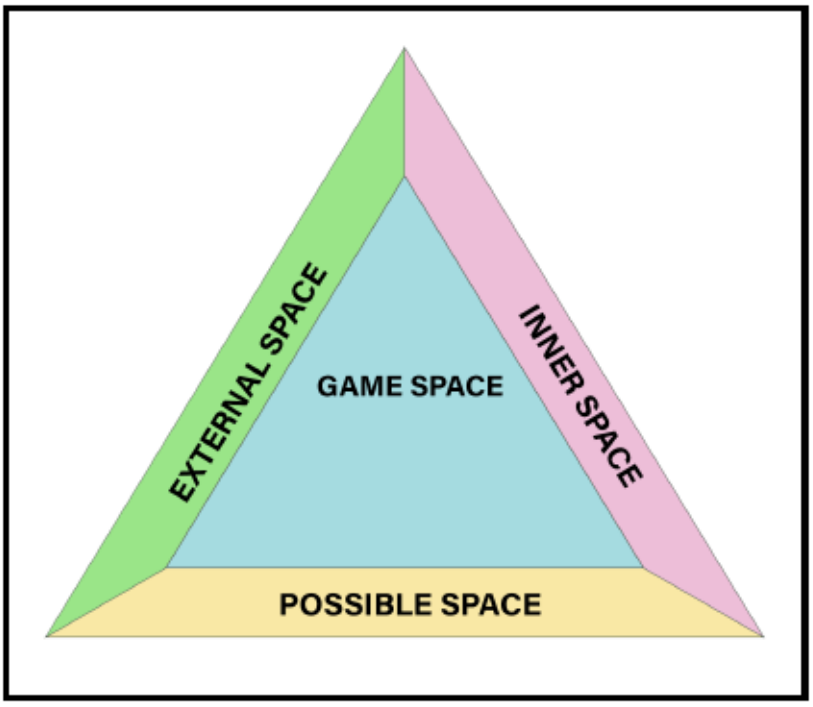

Fig. 24. Working model that was helped to create the first independent prototype, illustrating the relationships of play "spaces" in relation to the game itself.

The presented graphical model reflects how participant comments and discussions were less about giving clarity on how *wellness* or even *stress* was solved, but rather on how their games were bridging the multiple perspectives that surrounded these issues. From their perspective, it seemed that stress would gain meaning, support, and elucidation from the overlap of various spaces. The *game space* was to act as a bridge between the *inner space*,

external space, and *possible spaces*. Participants were cognizant of how while everyone experiences stress, how and why they do varies. Because of this, the game seemed to be a bridge both *inner* and *external* (other's) spaces, while pointing towards what positive *possible spaces* could be constructed or even already existed (see fig. 25).

	EXTERNAL SPACE	**INNER SPACE**	**POSSIBLE SPACE**	**GAME SPACE**
Group A example statements	"*Sympathy/ Empathy*"	"*Desire*"	"*Make you* stress free"	"*Discussion*" "*Physicality*"
Group B example statements	"*Community* oriented"	"Draw *their* stress"	"*Leads to* actions that *can* change the environment"	"*Colorful*"

Fig. 25. Examples of statements that informed the creation of this working model.

The games produced in these workshops also acted as physical support for the model, and examining what mechanics the participants used to support these playful, inquiring spaces helped in future prototyping. Group A's use of personal, inward facing prompts and Group B's use of drawing to create stress tokens both addressed the *inner space* category. *External space* was evidenced in both Group A and B through group prompts and discussions, as well as their prototypes having collaborative goals. The *game space* was perhaps the biggest difference between the two teams, but certain commonalities like prompt cards and targeted question sets remained in common. Finally, *possible space* repeatedly surfaced in their game values and discussions through reflective questions and conversations promoting new ways of thinking.

Chapter 5: Initial Development

As development moved from the workshops into the first phase of prototyping, solidifying the goal of this eventual game was the priority - determining what it aimed to get players to do through play. As logged in notes posted to the design process Github website, the creations of the participants and their proposed projects remained large influences: "I want to stay true to what the core design goal of these individual projects are - expression, companionship, growth, comfort" (Goodine, "1. August 8 2018 pt. 1"). How I had aimed to do so was not completely solidified, but I had envisioned physical based gameplay happening in two main stages; "...a game that **deconstructs** stresses in relation to their factors before players **reconstruct** them into their lives...In terms of medium, I am really being drawn to something physical, that affords for players to be able to draw and write on the play space…" (Goodine, "3. October 5 2018"). I arrived at the idea of *mapping* as an interesting mechanic to facilitate this social sharing. As previously discussed in the Chapter 2 game examples of *Humaning*, *The Deep Forest, & The Quiet Year,* mapping can be a powerful reflective device for spurring new ways of thinking, even if difficult conversations arise. For my own project, I imagined that the game was "facilitating social problem solving and problem orientation in the form of "mapping" to generate through reflection new ideas and perceptions" (Goodine, "5. November 7 2018").

Prototype Drafting

With this activity as a central pillar to the project, I began to devise a series of game prototypes that would use mapping and movement to direct the player through various stages of reflection on the game's wellness prompts. The desired flow of the gameplay and its core loops were under frequent revision, and the board iterations were physical investigations into rule possibilities. How slow or fast would the discussions happen? Was the game to be self directed, or pushed by some form of constraint? Some of these explorations were less successful than others. For example, a rejected version of the game gave players their own boards that would be 'mapped' according to coded cardinal directions that responded to participant's own stresses (fig. 26). This version and several other prototypes were rejected because they were ultimately too isolated in size and use from the spirit of community and support that runs parallel to intersectional approaches to wellness.

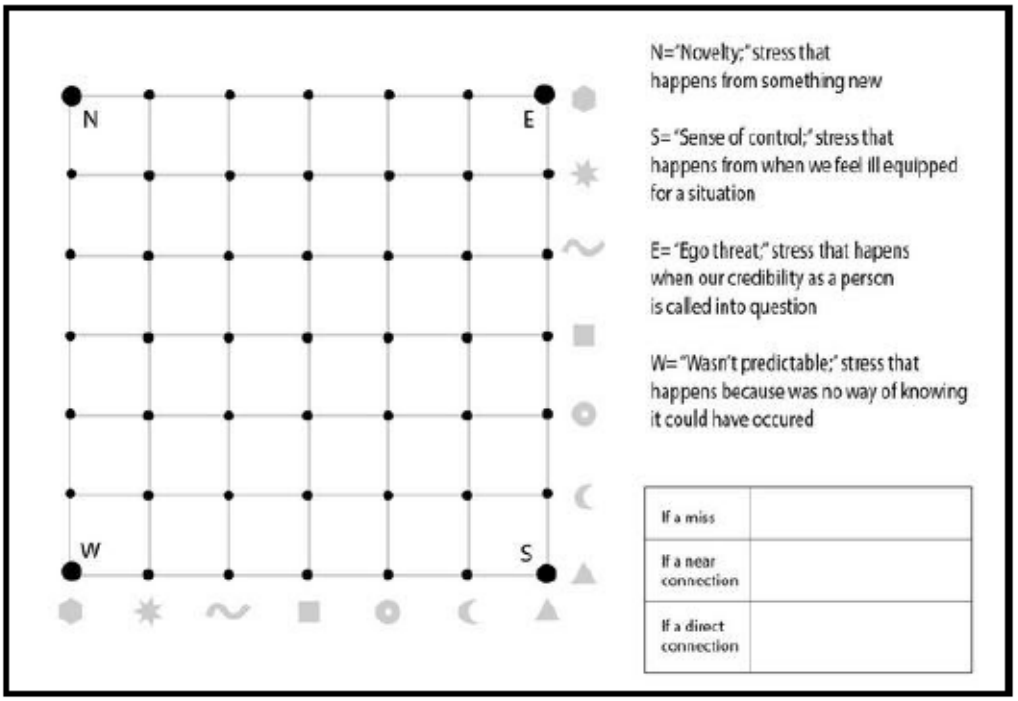

Fig. 26. Early tests used a cardinal mapping scheme in an independent drawing game.

The most fruitful of the prototypes, and what I decided to eventually playtest, was a large board device that would be laid over top of drawing paper (fig. 27, 28, 30). The game board had holes in its surface, which would permit players to draw inside of its empty spaces. This drawing would connect to *inner space*, as players would start the game by drawing a stress that was relevant to their own feelings and experiences. The main goal of the game involved challenging individual players to move from the *inner space* of their drawing and into *external space / possible space* discussions with the group through responding to prompts (fig. 29). The *game space* of the board was to act as a 'magic circle,' a space of play that is (at least perceived by players to be) suspended from the risks, worries, and stresses of 'normal' life.[12]

[12] "Although the magic circle is merely one of the examples in Huizinga's list of "play-grounds," the term is used here as shorthand for the idea of a special place in time and space created by a game. Within the magic circle, special meanings accrue and cluster around objects and behaviors. In effect, a new reality is created, defined by the rules of the game and inhabited by its players." (Salen & Zimmerman, 95).

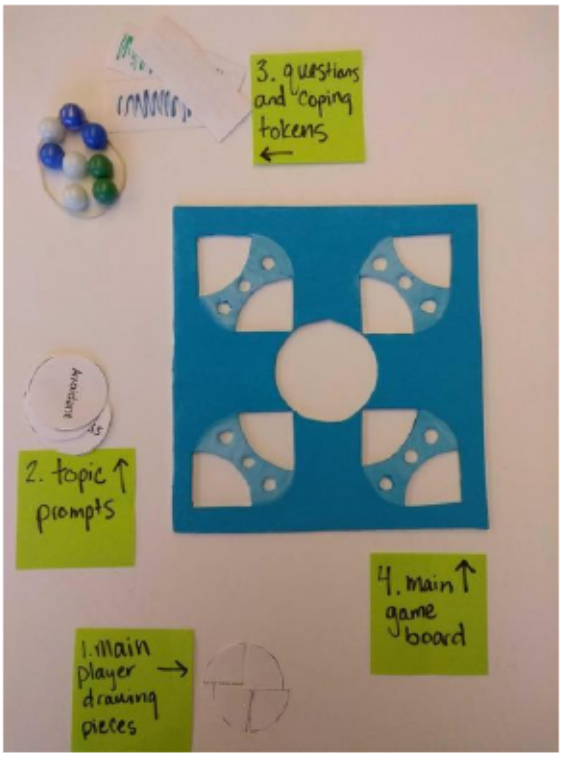

Fig. 27. An early prototype, where the main game structure was planned with low fidelity materials.

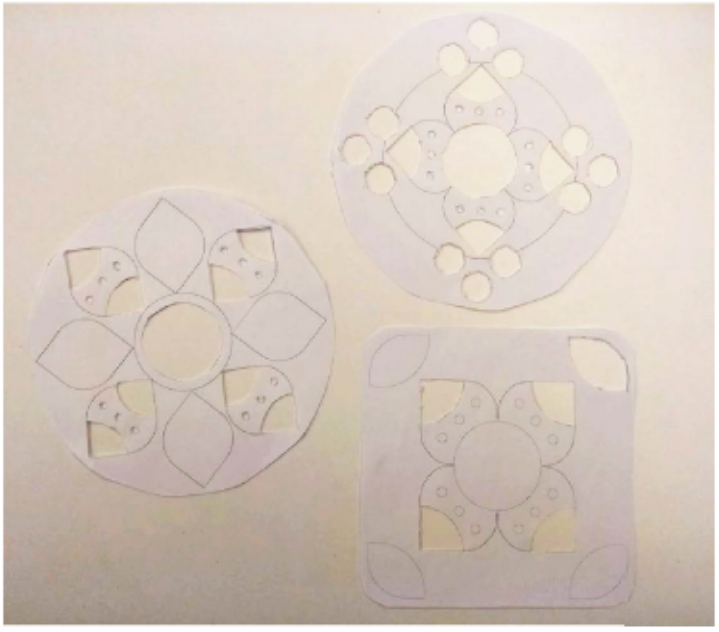

Fig. 28. Paper prototypes of the game board shape; play starts from the outer 'petals' and moves towards the center.

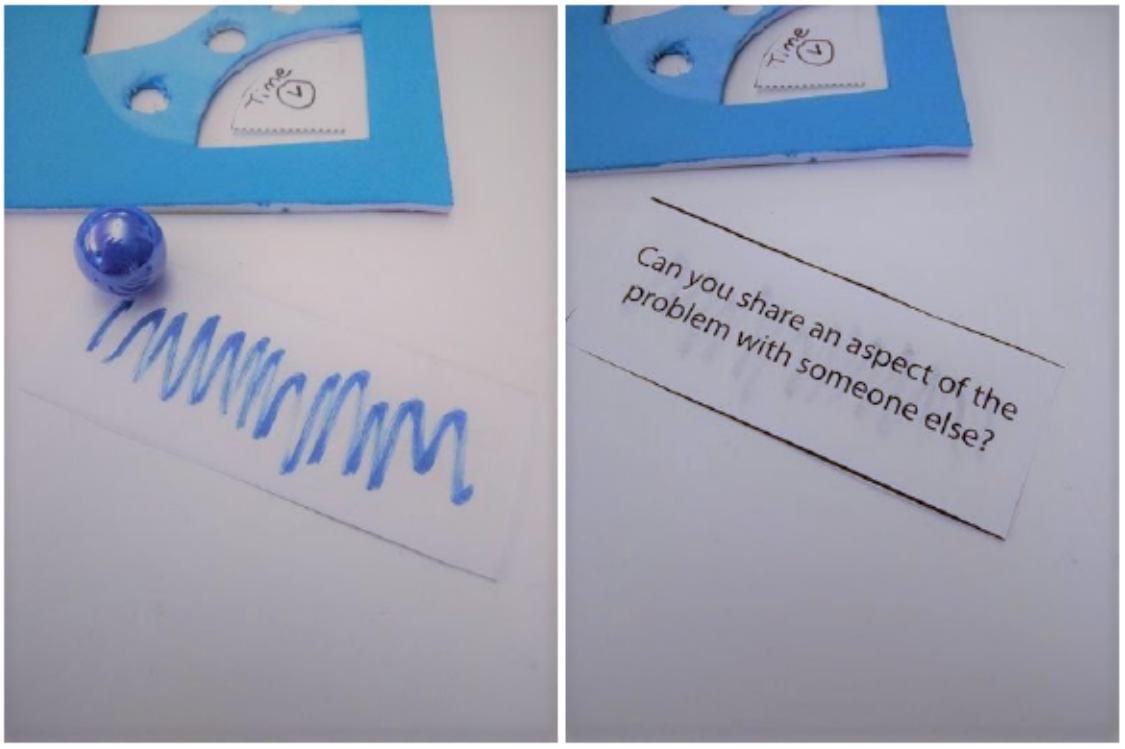

Fig. 29. Marbles were used to reflect different prompt types. Players in playtest 1 were told that the colors matched different kinds of prompts, but not all of the category details for the sake of minimizing confusion.

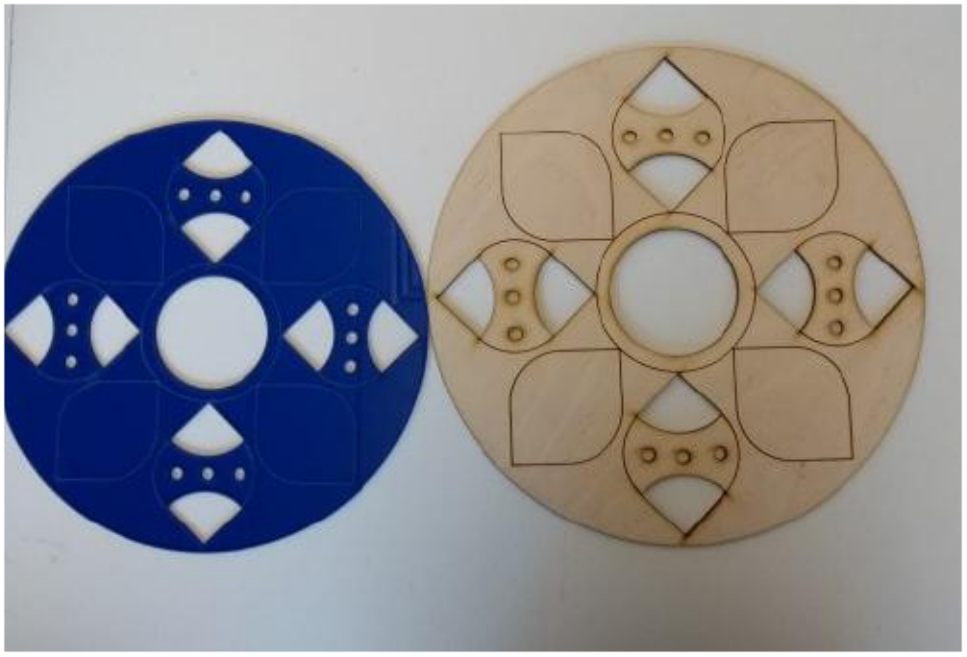

Fig. 30. The prototypes that were used in the playtest 1. A plastic and wooden version were used to explore different materials.

The rules for this drafted prototype, as used in the first playtest, were as follows:

1. In the beginning of the game, all players would agree on a prompt word to discuss together. This word would in some way relate to a stressor of everyday living that they were willing to examine in the play session. A series of possible words were provided, but if none of the provided prompts were useful, the group could come up with a different word to act as a centre of discussion.
2. Players then individually responded to the prompt through drawing through the large outermost holes of the game board (fig. 28). There were no rules for what colors to use, or how literal or abstract the drawing should be. The intent was to simply respond to the prompt word in a way that "described" the associated stress.

Fig. 31. An image from the playtest of participants starting the game.

3. Once everyone was finished with their drawing, the last person to finish drew a colored marble from a bag. The rest of the players did this as well.
4. These marbles matched a provided set of question card colors (fig. 29). When the prompt on this question card was answered either individually or as a group, the marble was put on a corresponding hole in the board by whoever answered it. These 'coping marbles' were indicators of player's progress in a certain color category. Some cards asked for verbal responses, and others asked for drawings.

Fig. 32. Some of the prompt cards were less stress related than others, acting as 'ice breakers'.

5. This cycle of responding to coping marbles continued until each player had acquired three different marble colors on their 'petal bridge.' Players who finished their bridges before the others continued to draw marbles as before, however, they could now give marbles to other players if needed.

Fig. 33. Participants realized they could rotate the board, and did not always draw in a straight line.

6. When everyone had three different marbles across their petal bridges, gameplay paused for people to redraw their stress like in step 1, but this time in consideration

of the acquired coping skills and gameplay discussions had. This was done in the final remaining hole in the gameboard.

Fig. 34. The initial prototype board during playtesting, near the end of the game.

7. When finished, players would go around the table placing their reframed drawing face up into the middle of the board, making a collage of responses. Everyone shared any final thoughts or sentiments before the end of the game.

Fig. 35. The end collage served as a record of gameplay and conversations.

Coding and Word Cloud Analysis

In working with the survey data that was collected from the playtest of this prototype, I was primarily interested in knowing what people were saying about the game. What did they like and dislike? What were they suggesting as improvements? What were they still unsure

about after playing the experience? I wanted to better understand the relationship between frequent occurrences in the data content and these questions. To do this, I used the methods of coding and word clouds. I first used the coding categories of **likes** ("I like the materials"), **dislikes** ("I didn't like the one that asks what is unique about you"), **observations** ("The other questions seemed standard conversation game-y"), **suggestions** ("Clear up wordings on some cards"), and **questions** ("Curious if more players would make people less likely to participate every round?") to categorize the data at a sentence purpose level. I went through all of the responses and highlighted which parts fit the aforementioned categories. Naturally, some answers did not follow a proper sentence structure, or were off topic. I removed any simple yes/no answers, or survey responses that did not offer any new perspectives to study ("not at this time", "we already mentioned them all"). This preliminary batch of coding was done at a sentence purpose level, rather than word by word as with the previous grounded theory analysis, since I did not need to generate new and granular theory. Instead, I was only looking for general ideas and trends that I could carry forward into my new design.

After everything was tagged with one of these five categories, the statements were then further separated into the **inner space** ("It did make me think about things that do stress me"), **external space** ("good to see other peoples stress sources and their coping mechanisms"), **game space** ("The board was beautiful"), and **possible space** ("Curious if more players would make people less likely to participate every round?") model previously constructed with data from the participant workshops. The final step of this analysis used illustrative *word clouds*. Word clouds as a design method can help to turn qualitative data into something yielding new information through visual representation; "when interview transcripts are segmented based on meaningful criteria, the word cloud that is subsequently generated can reveal potentially insightful and surprising themes" (Martin & Hanington, 207). These word clouds are shared below as an overview to my playtest 1 findings. The size of each word in its cloud represents their frequency in relation to one another, with bigger words appearing more often in the responses. I limited the scale of each cloud to 30 words, to avoid too much extra noise. Common/linking words ("the", "a", etc.) were also not included in the clouds. The clouds were made using the software *Wordle*, a free open source word cloud generating software (*Wordle*, Feinberg). Each cloud was made from the likes, dislikes, observations, suggestions, and questions for each 'space'.

Game Space

Fig. 36. The board and drawing were commonly referenced in the game space word cloud

Game space represented the largest word cloud data set from the participant responses, which was unsurprising given that the playtesters were trying to help improve the design of the game itself. Some of the things that they found the most compelling were the drawing as a main mechanic ("Enjoyed the simple, stress-free drawing"; "I loved the aesthetics of the board and the drawing") and the design of the board ("Like the board!"; "The board was beautiful"; "I really enjoyed the feeling of a wood board"). This was a reassuring sign that the process of creating a physical 'magic circle' was on the right track. The materials were however also subject to some constructive criticisms, including the use of color dependent marbles bringing accessibility issues ("I had trouble distinguishing marble colors") and the physical drawing space being too small ("Maybe petal shape was hard to draw into"). Suggestions to improve the game were overwhelmingly about the shape and size of the board being adjusted to give players more room to draw ("bigger disk is better"; "I felt it'd be nice to have a variety in sizes of drawing spaces"; "maybe better alignment / use of spaces"). Several other comments addressed confusing rules and flow issues ("slightly slower progression might be nice"; "some massaging of the rules regarding prompts"; "clear up wordings on some cards"), and a few others still suggested experimenting with materials ("ink gel pens for fine drawing?"; "I think a heavier stock for the paper would make it easier to turn"). In combination with the group debrief conducted after the playtest, this data indicated to me that the physicality of the wooden board was one of the game's most appealing features.

Inner Space

Fig. 37. The inner space word cloud reflected thoughts and feelings

The *inner space* comments reflected introspective player experiences with the game, including some complex reactions that were key drives for subsequent prototype re-evaluation. Overall, it was clear that participants were being asked to feel and think through gameplay. Positive words participants used to describe the game experience included "cosy"; "refreshing"; and "inspired". However, one participant pointed out that not all thoughts might be pleasant from the experience; observing that the goals of the game "made me think about things that do stress me… this stressed me a bit." In post-play discussions, this participant elaborated that group sharing was not a natural activity for them, and it was uncomfortable for them to reflect on personal 'stresses' in a public setting at all. They suggested to "avoid any serious reflection on stress," calling into question the suitability of the term *stress* as a goal of the game. As will be further discussed in Chapter 6, a shift was made to frame the game as 'wellness' exploration in order to reduce the potential of the experience to induce overly negative feelings, while still providing a suitable platform for critical reflection.

External Space

Fig. 38. The external space word cloud reflected the players' feelings of interacting with other people

Group sharing and conversation tended to be received positively in the survey comments ("our group laughed together a lot, that was great"; "I feel connected to the players"; "good to see other peoples stress sources and their coping mechanisms"). The dislikes ("lacked a component to bring us together") and suggestions ("(have) a designated time to explicitly discuss") of the responses for this category sought to bring more opportunities for interpersonal connection. These comments, together with the aforementioned inner space 'stress' discussion, led to the conclusion that the experience had been framed with too much individual obligation, and less social collaboration. In the playtest, unlike the workshops, participants hadn't had a chance to slowly develop investment to the game or its players. The design challenge moving forward would be to harness the positively received qualities of this prototype to make a game that put less emphasis on deep individual reflection, and on contextualizing personal reflection in the safety of group discussion.

Possible Space

Fig. 39. The possible space word cloud also mentioned people, and experiences

'Possible space' hinted at some of the deeper conversations that had occured during gameplay for some players ("it got me thinking a bit about how I relate to objects and activities"; "it was neat to reflect on how others have moved incorporate places of origin (versus) me taking it for granted"; "identity came up"; "it made me think about how I cope (or don't cope) with stress on a day to day basis"). However, as one participant reflected, "it is really up to the players to choose the direction of the game". The prompts and structure of the rule framing surrounding the board remained at this stage ambiguous, putting perhaps too much responsibility on those who picked up the game ("I wonder how different it would feel with people I am not comfortable with") and not on the design itself.

Chapter 6: Revision, Re-evaluation, & Resolution

The results of this playtest and its subsequent analysis helped to direct revision of the game in four main areas: the **drawing setup**, the game **prompts**, **subject** presentation, and **rules** structure.

Prototype Revision

Drawing Setup

During the first playtest, the game board had been one of the project's most interesting 'game space' attributes for participants. Many participants expressed a sort of joy in experiencing the drawing activity, some even remembering similar toys that they had used in their childhoods. This joy in turn helped reduce stresses about sharing. The wooden board design presented to playtesters had also seemed more enticing than the acrylic version, and for this second iteration I continued to iterate with wood materials. The size of the board's radius was increased, leaving more room for drawing. However, rather than leaving holes in the board for drawing paper to be put underneath, large chalkboard paint areas were added so that the board itself could be drawn on with chalk. The goal of this spacial alteration was to leave players feeling more like they were contributing to a common image or space, as opposed to working on individual drawings. As a drawing material, chalk carries an impermanence and impreciseness that would make the drawings seem less like exhibitions of artistic mastery, and more like expressions of self. Finally, the design of the board was also altered to better reflect the game's intended progression, with four large drawing space "leafs" being more obviously segmented than the four small word "petals".

Fig. 40. An image of the board during painting. Wood varnish was applied, so that in case drawings 'spilled over' the intended areas the board could be more easily cleaned.

Prompts

While some of the prompts had been well received by players, others had seemed too individually focused, and others disconnected from the subject of the game. In seeking to make the game more reflective and inviting, the original text based card prompts were replaced with a custom, illustrated card deck (see appendix 7). These cards featured a range of imagery created in a sketchy, inky style that was intended to act as a whimsical 'semi-blank' canvas for players. That is to say, the cards were designed to give players starting places for their own ideas and eventual drawings. Words were paired with these images, sometimes in counterintuitive or juxtaposing ways, like a caterpillar chrysalis depicted with the word 'stop' (fig. 40). The intent of this was to challenge players to think in different ways, and along the way, consider alternate 'possible' wellness spaces.

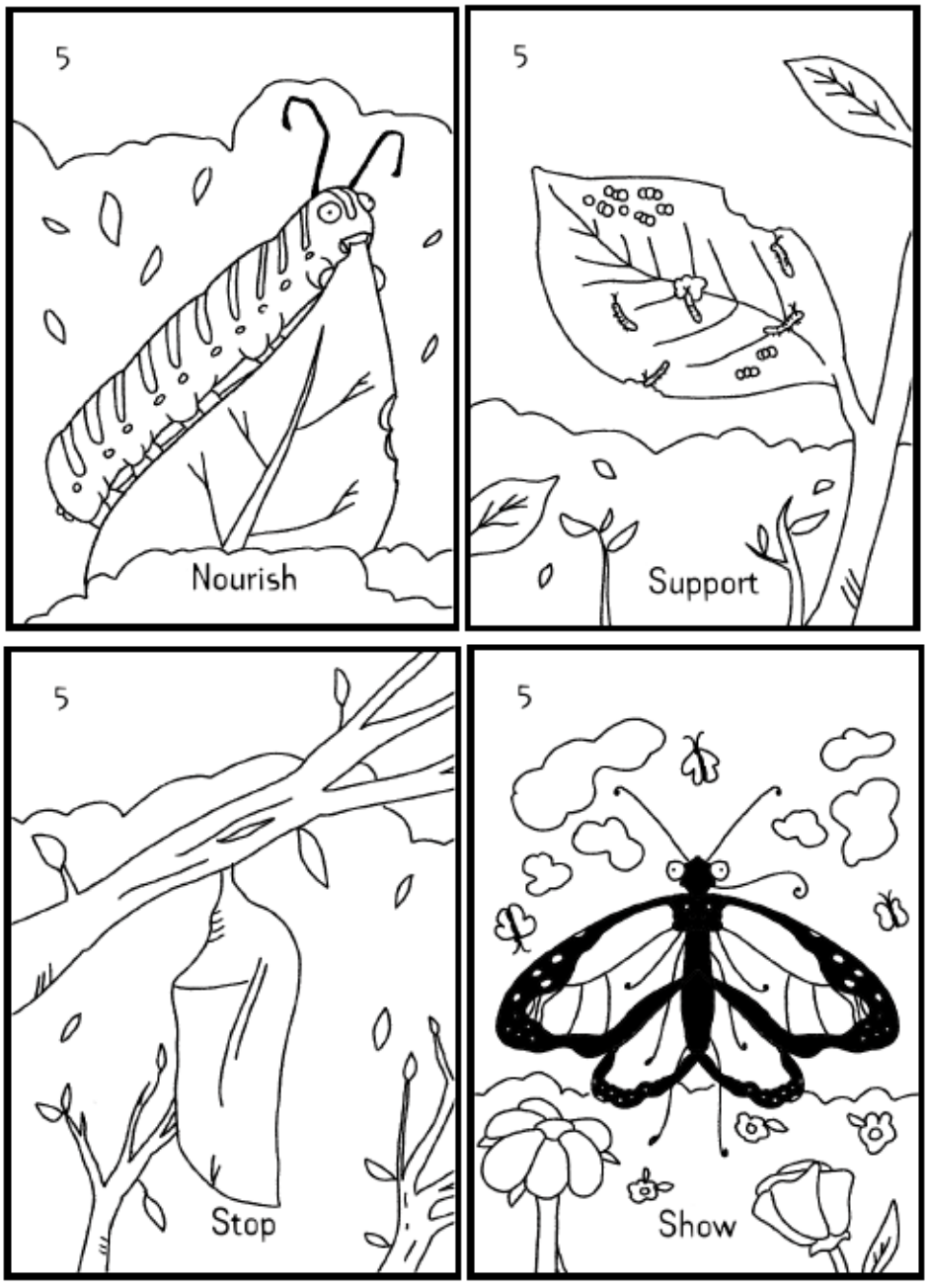

Fig. 41. A series of illustrations for the game. Cards were given a number between 1-9, with four different cards for each number.

Subject

The playtests had revealed some of the pitfalls in using 'stress' to describe the goal of the game. It became clear that 'stress' is a word that carries many connotations, particularly medical, that went beyond the scope of what I could address as an artist and game designer. Further, revisiting literature concepts like the intersectional 'radical softness' approach and Khaled's concept of 'reflective game design' spurred the realization that the game itself should act as a space that was more open to interpretation than not. Rather than simply

telling players to come up with coping strategies, a more intersectional and radically soft approach would give players the tools which they could together build their own meaning. In reframing the game's subject matter, this prototype removed *stress* as its focus, and instead recentered on asking players to answer: *what is the feeling of wellness?*

Rules

The rules of the game were altered to fit this refined project direction. In creating this second prototype's rules, emphasis was "given on group discussion and collective action" (Goodine, "March 17 2019 pt. 1"). The rules shared with players in the second playtest, were as follows:

1. Using the game cards, players worked to fill in as much of the board as they could with their group's drawings. One game run involved filling up four 'leaves' on the board (the outermost larger shapes) over four rounds. To start, the illustrated prompt cards were separated from blank writing cards that were included with the deck, and put face down.

Fig. 42. A still taken from video studies made during playtest two.

2. The blank writing cards were next divided evenly between players, and everyone wrote one word related to wellness that was relevant for them on each card. The word could be something that defined, represented, or was an example of this concept for them. When filled out, all the writing cards were put face down in a pile separate from the already face down illustrated cards.

Fig. 43. The writing cards have dry erase materials, so they can be reused.

3. To *start*, the last player to finish their writing cards would draw out an illustrated prompt card and flip it over for everyone to see. They would also take one of the writing cards from the pile, and write its word on one of the board's inner petals.

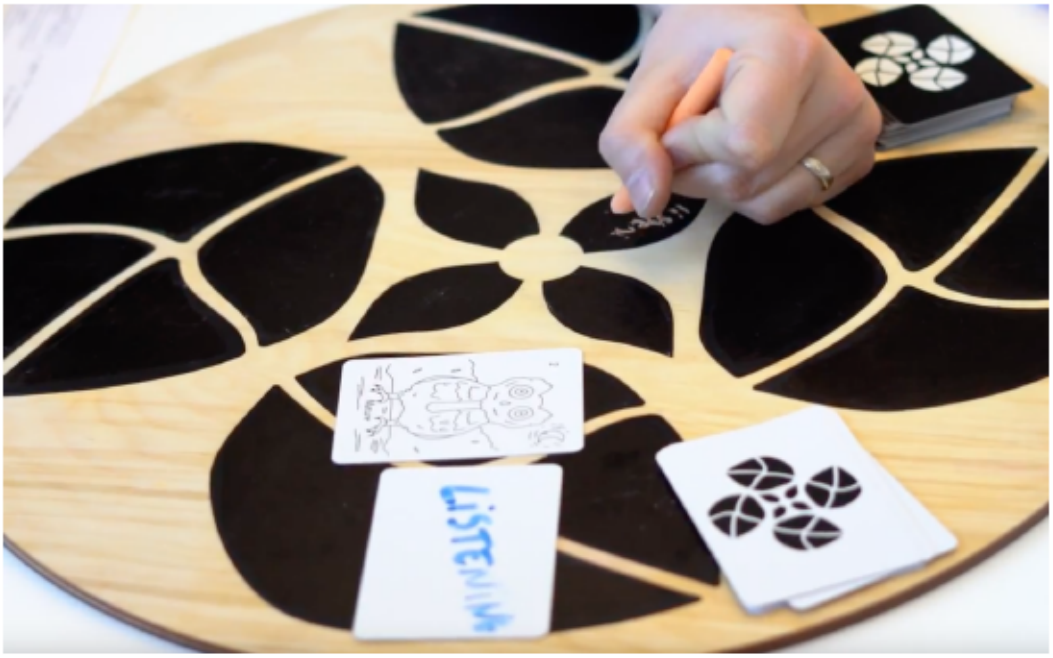

Fig. 44. The written words are added to the center of the board during a game.

4. Now that an illustration card and a writing card were drawn and shown to everyone, the *goal* of the game was to combine these words into a new *drawing form* on the board. The group needed to negotiate what kind of illustration they wanted to make out of this combination, agreeing how and what to draw.
5. However, the *challenge* of the game was that they could only use the number of lines that was indicated on the drawn illustrated card. Each player could draw any number of lines, as long as the total number of lines made in the turn was equal to the number indicated by the illustrated card.

Fig. 45. This player drew an ear with two lines to synthesize 'listening' & 'nature'

6. After a 'leaf' was filled, a player who had not yet drawn any cards got to pull out the next round's written and illustrated cards. This cycle of drawing cards and filling in the board was continued until all of the possible drawing spaces were filled, or players decided to end the game.

Fig. 46. The completed board from the second playtest.

Playtest 2 & Prototype Re-Evaluation

In order to see how these design alterations affected player experience and reception of the game, a second round of playtesting was conducted. This time a group of four was asked to try the revised game. Video studies were used to capture both conversation and use of the prototype, with a camera fixed directly above the players (see fig. 46). In complement to the grounded theory analysis and word cloud representations employed during the first playtest, this time directed content analysis was used to interpret the playtest data. *Content analysis* is a method for understanding the characteristics or context of the language used in a print, verbal, or electronic text (Hsieh & Shannon, 1278). Like grounded theory, content analysis also looks for themes through coding. However, unlike grounded theory, content analysis emphasizes finding meaning from qualitative materials as opposed to generating theory (Cho & Lee, 15). *Directed content analysis* is a form of content analysis which employs prior theory in order to validate or extend that existing theory (Shannon, 1281). By engaging with directed content analysis, one is able to build operational definitions for each coding category based on prior theory.

Although the working codes (*likes, dislikes, observations, suggestions, questions*) employed after playtest 1 were useful for understanding the way players were perceiving an early prototype, they were less useful at this stage of the thesis. Unlike before, I was not wholly focused on gameplay improvements. The goal of this second analysis was to understand how players were interacting with the proposed game system, in order to see if these interactions could be synthesized with my prior working design model, shedding light on my original research questions. Because of this iterative nature of the game's development, my methods also required adaptation and revision. Thus, the coding categories used in this directed content analysis were honed in to the **inner space**, **external space**, **game space**, and **possible space** findings from before, with new comparative codes taken from Khaled's notion of reflective game design. Employing **clarity over stealth**, **disruption over comfort**, **questions over answers**, and **reflection over immersion** as new codes would give me the opportunity to see if and how players were reflecting on the various spaces of the game (see appendices 8 & 9).

Game Space

The newly added lines mechanic was a frequent point of *game space* discussion. While one participant commented that the lines could provide *clarity* through their constraints ("It's a nice constraint for people who do like to draw because then they're like, 'oh how do I do this?'"), most comments arose when players had to brainstorm *disruptions* caused by not having enough lines. In this way the lines became a collective challenge to be solved ("I wanted to write adventure camp, then I was like oh no, I won't have room"; "I was thinking about sound but it's hard to do sound with two lines without it looking like a wi-fi signal"). Driven by the imposition of the lines economy, players quickly came up with a creative way to "cheat" the game by not lifting their chalk to create long, continuous lines ("Technically if you don't raise the pen..."; "It's only one line if you don't lift the pencil"). The *questions* for *game space* consisted of two broad types; practical questions about the game rules ("So do we need to write on all of the cards?"), and more meta questions about strategy ("What is the lose state in this game? Not playing it?"; "If I make a fill, does it count as a line?"). Although players observed that the game was a tranquil experience ("It's a meditative process"; "it's more like etching than it is something directed"), immersion-breaking communication was clearly a prominent way players worked through these questions. Players were frequently *reflecting* on how to connect prior drawings into new images and meanings ("In this one, we related the small ear to the big ear..."; " These people are already kind of sleeping, so we could do a rainstorm...").

Inner Space

Inner space reflections were often connected to the *disruption* that limited lines caused, and how that made players feel. Initially, players felt some pressure not to 'mess up' the progress of the game or the pictures on the board ("I feel so much pressure not to mess things…"). However, this perceived risk diminished as gameplay continued and the efforts to fill in the board became more collaborative ("I like how afterwards this leaf is probably gonna be the cat thinking about this thing"). In fact, the risk of making a misplaced line transformed into something that was enjoyable because of its unpredictability ("I want to see what emerges"; "I kind of don't want to plan the line strokes. I just want to plan okay, we're going to try to draw this…").

External Space

Players were frequently asking *questions* about how others were thinking and feeling during gameplay; about what others wanted to do in the game, and how they thought the group should proceed ("Do we want to go clockwise or?"; "So who wants to draw?"; "What are we thinking to draw? What are we thinking to represent through grow and listen?"). These questions served to both check in with the other players on an interpersonal level, and to practically navigate the game's limited line resources ("Should we do two lines each?"; "Can you do my whole hand in one line though?"). The extensive discussion that happened here was encouraging that the revisions made since the first prototype were making an impact. There was less passive, personal, emotional reflection, and more constructive, interpersonal reflection happening.

Possible Space

The act of combining provided prompts with player-given words proved an evocative activity. Players *reflected* on a number of memories and experiences in crafting novel drawing combinations, including the following comments:

- "It makes me think of how cuddly my pets are in the morning when they're hungry and want to be fed "
- "I think about waking up before my partner and having a couple minutes to observe them sleep in the morning"
- "It made me think about process. How learning to listen is a journey"
- "... This made me think of like when people get back from travelling and you get to listen to what they did and so on"
- "One person talking to another. The other person enjoying what they are hearing"
- "It made me think of… talking to plants"

- "...When you want to stay in bed because it's rainy. Could be falling asleep to the sound of rain"
- "You know when you gently push a cat's ear down and gently tussle the hair…"

Though these were not literal references to 'wellness,' they were clear associations to what the players felt were related concepts. Moreover, in sharing these experiences out loud, other players had an opportunity to consider how others might consider wellness.

Prototype Resolution

The second playtest was encouraging evidence that the changes made to the game's drawing setup, prompts, subject presentation, and rules structure were working as intended - the game was eliciting collective reflection on the concept of wellness. Players were able to communicate memories and experiences, and find support in expressing these notions. The reception of the game helped to rework the original game model produced during the participatory phase of this research into a version that was synthesized with the player experience. In this new model, the particular game devices *ColorFull* uses to reach various 'spaces' has been added. Although it is a broad framework, it gives a possible starting point for how the tensions of personal and collective issues might be addressed in other game formats.

Fig. 47. Combination of earlier grounded theory model with *ColorFull*'s relevant mechanics

However, a few final minor changes were made before the cessation of prototyping: namely in regards to the game's **rules**, **presentation**, and **dissemination**.[13]

[13] This adjusted version of the game was not subject to a third playtest, given that the adjustments were relatively minor, and would not foreseeably shed further light on my research questions. In their

Rules

ColorFull
2-4 players
~40 minutes

a game for creatively exploring and expressing wellness

The goal

Using the game cards, fill in as much of the board as you can with your group's drawings. One game round involves four turns of filling up a leaf on the board with four card prompts, and one game run involves filling all possible spaces with drawings.

Preparation

Separate the blank and illustrated decks. Shuffle the illustrated deck and put it face down. These will be used later to help prompt the group's drawings.

Next, evenly divide the blank deck cards between players. On them, use the markers to write one word on each card related to wellness that is relevant to you. This may be something that defines, represents, or is an example of this concept for you. Do this for the whole deck, then put these face down in a mixed up pile when everyone is done.

Steps

1. Planning

To start, a player will draw one of the blank deck cards from the pile and write its word on one of the board's single inner petals. Then, they will draw out an illustrated prompt card and flip it over for everyone to see. Considering both the blank prompt and illustrated subject cards, players as a team work to draw an agreed upon picture. Once all the players understand the subjects, they will negotiate what kind of illustration they want to make, and who will draw what.

HOWEVER, they may only use the number of lines that is indicated on the illustrated card! The group can draw any number of lines as long as the total number of lines is equal to the number indicated on the card. Hint: lines can be long!

2. Draw!

Once the picture is agreed upon and everyone knows who will be drawing what, it is time to start the timer and draw the picture before the timer expires. Hint: think about comic book panels!

3. Ending

After the drawing is done, a player who has not yet drawn any cards gets to pull out the next turn's blank and illustrated cards. This cycle of picking cards and responding in drawing is done four times to finish a round, with the game ending after four rounds when all of the possible drawing spaces are filled.

Fig. 48. The rulesheet used with the game presentation was altered to reflect participant responses and confusions to the game during playtest 2.

At the beginning of playtest 2, players had had many questions about how to play the game. In response, the rules of the game were refined to avoid future confusion. The 'lines' of the

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chapter on experimental game design best practices, game design scholars Waern and Back write that "there is little reason to test two versions of a game, if one is simply lacking an important element for the game to work. Furthermore, the design factor that is varied must be sufficiently interesting in a wider context than just that single game. As argued by Zimmerman, Forlizzi and Evenson (2007), design research is judged primarily by its relevance to design" (166). However, insights gained from a public showing of the project are detailed below.

game had been particularly vague for some players (i.e. "So, total two lines? Not two lines per player?"), so extra detail was added on how and when to use them. Small illustrations depicting board's 'petal' and 'leaf' were added to avoid player confusion on terminology. As well, the 'cheat' that players had found during the playtest about how a line worked was also folded into gameplay; rather than pressing players to only make a certain sort of line, the rules added the hint "lines can be long!". Some of the adjusted rules also directly connected to gameplay. During playtest 2, the lack of a timer meant that players took much longer at playing the game than anticipated, and thus only had time to fill three of the four flour leaves to completion. Adding a physical timer during the draw time meant that play sessions could be reasonably planned, and give players a more directed challenge during play.

Presentation

During the second playtest, players had also exhibited difficulty in navigating the gameboard when sitting across from one another, due to the difficulty in drawing 'upside down'. To remedy this and make the game more easy to use during play, I added a rotating disc underneath the board to ensure it could be spun around to the actively drawing player.

Fig. 49. *ColorFull* on display at Concordia's 4th Space. Note that the board can be spun around for players at any side of the table.

Dissemination

The final game project, *ColorFull*, is a reflective experience for players to explore notions of wellness in a collaborative group setting. Informed by issues of health equity, intersectionality, and participatory production, the project seeks to be a 'pause' for

participants. The game itself is a magic circle of co-creation and co-learning, wherein inner and inter personal sharing spurs new ideas and ultimately, ways of seeing the world. *ColorFull* was displayed for two days during the Master of Design student showcase at Concordia University's *4th Space*. The game was displayed along with early prototypes and video documentation of the research-creation process, in a semi-secluded area with ample seating for visitors to either engage with the game or reflect on it. During this installation up time I conducted a public presentation and open question period for the project. This occasion was a chance to receive informal feedback on the project by visitors who may or may not have been familiar with its development, and to see how this final version was resonating with visitors.

Fig. 50. *ColorFull* was displayed in a semi-isolated and quiet area of the *4th Space*, with ample seating for players to rest and reflect.

I observed that the set up of the game - surrounded by plants, bench seating, and soft running water sounds - was an enticing invitation for rest. Over the course of the showcase, I would notice many individuals who paused for quiet moments at the installation. This brings me to consider how the relaxing appeal of the game could be scaled. By consciously integrating actual social places and spaces into the magic circle, could the game be brought into new lived horizons? As well, I observed that those who engaged with the board (as

opposed to resting at the installation, or reading the accompanying documentation) tended to have their own groups of friends or acquaintances with them. Would an alternate game interface and/or installation presentation have had more success in getting strangers to play together?

Fig. 51. A solo visitor pausing at the installation.

Fig. 52. A group getting familiar with *ColorFull*'s rules.

During the actual public presentation, the project was discussed in ways similar to the second playtest; as a useful means for considering new or different ways of thinking about wellness. However, one unique conversation that arose from this occasion was in regards to the board's physical design. Visitors were curious about the size, material choices, sustainability, and reproducibility of the board. Could the game board be larger? Could it be made to permit larger drawings? What other sorts of 'drawing' could be facilitated through different board designs? These questions of materiality (and often its connection to affect) had not been wholly anticipated at the start of the thesis project. However, throughout the production learning process and through conversations such as these, it became clear that these are avenues of investigation that would merit further study. Questions remain about what it means to imbue a physical game design with one material versus another; how player affect can be engaged or disengaged based on newly invigorated physical senses.

In an effort to make the game as easily distributable as possible, a portable version of the game was also adapted into an 'interactive zine' and included with the installation. This zine featured illustrations and single player rules generally similar to the main game, but also included extra information pertinent to wellness for Concordia students. This demographic was targeted specifically in the publication due to the zine's placement in student centric areas of campus. During the event the zine was discovered by a member of Concordia's Health and Wellness offices, who later helped distribute the publication at Concordia's Zen Dens (Youngs-Zeleski, "Introducing Zen Dens").[14]

[14] While an analysis of the zine's reception at the Zen Dens in particular is outside of the scope of this thesis, this location presented a unique opportunity for the game due to on-hand counsellors and staff who would be equipped to help students delve more deeply into matters of health and wellness on a case by case basis. "Inherently holistic and preventive in nature," the Zen Dens were created at Concordia University after recommendations from the school's 2018 Student Health & Wellbeing Review (Youngs-Zeleski; Concordia University, "Student Health & Wellbeing Review"). Much like this thesis itself, the Zen Dens aim to support "health and well-being and develop more spaces for meaningful connection."

Fig. 53. The zine was offered as a free take away for visitors to the final MDes showcase and the Concordia Zen Dens.

Fig. 54. A young player experimenting with markers. This player also enjoyed coloring in the on display zines.

Chapter 7: Reflections and Conclusions

Within the bounds of its play space, *ColorFull* asks players to consider what wellness means to them. As an experimental game design prototype, it is a synthesis of a unique research-creation investigation done in dialogue with contemporary emotional and empathetic wellness games, as well as broader cultural understandings of wellness. The process of designing ColorFull was critically influenced by current social issues, established theory, and iterative design insights. Ultimately, the process of addressing these subjects through a game based design produced several unique reflections on design research. Described below, they help to not only address my own research questions, but to also raise new questions of likely interest for future wellness game designers.

Reflection #1: Wellness is felt both individually and socially

At the outset of this research I was curious to know *the feeling of wellness*. This quest was driven partly by the previously described contemporary trends of emotional and wellness games, which seek to make players feel all sorts of emotions, but usually not with any reflective intent. Players might feel passive sympathy or empathy about someone else's well being, but I was curious what a more active framing would look (and feel) like. What became evident throughout my own research is that there was a difference between how players expressed their feelings when playing in individual versus collective settings. When the goal of the game was to create something collective, players were able to open to one another in surprisingly deep and touching ways. Games that then seek to create connection to others, could benefit from fine tuning the balance of individual versus collective emotion and experience.

Reflection #2: Framing is key for participants, playtesters, and players

One of the thornier issues that emerged throughout this work's testing of *how to play with the feeling of wellness* was the need to carefully adapt research goals and frameworks for participants. While the 'stress' presentation was appropriate for the workshop setting where participants had active agency over their involvement, it became less so during the iterative prototyping phase. Here, 'stress' had become isolated from its original area of concern for playtesters - the social determinants of wellness and well being - requiring a reframing of the game to one of 'wellness'. Research-creation provides a unique opportunity for adaptive and creative methods to be applied in knowledge seeking efforts, and designers should consider what this means for the stakeholders of their work throughout the project's creation, as opposed to end 'users' only.

Reflection #3: Different durations of experience require adaptation

This research's design included both medium term (workshop) and short term (playtest) forms of data collection. However, a question that remains is that of the lasting impact of a 'wellness' experience for players. Did the act of creating their own games create a stronger experience for participants, versus the playtesters who assisted during *ColorFull's* development? What might a long-term installation of *ColorFull* look like? Moreover, in creating the short but collective experience of *ColorFull*, traditional rule structures and goal design of board games were challenged with a much looser and open ended play design. Would a more competitive game be possible to similar effect? Do wellness games need to be relaxing, or could they engage more deeply with Khaled's notions of *disruption over comfort*?

Reflection #4: Research methods must be flexible in design

The design process for *ColorFull* was iterative and segmented, such that theory could be turned into action, and those actions tested for desired results. However, this alone would be an overstatement for the winding path that this project took. Choosing adequate design methodologies to cover the research-creation process can be a tricky one, with a flexible hybrid of established theories and case studies ultimately proving to be the most fruitful for my project. What was proven imperative in this case study was the need to build an open-ended game such as this with staggered development phases as meta 'check-ins'. The design process (and ultimately, the game itself) becomes one of funelled complexity reduction, rather than straightforward use case design. As an example of this, I was adamant throughout the creation of this game that I did not seek to create a *treatment* tool, and was quick to move from *stress* to *wellness* when it became relevant to do so. At times, complexity also had to be reintroduced in the project, such as through playtests or surveys. However, these new unknowns were controlled with deliberate targets, such as when change in prompt design was tested between playtests 1 and 2. These micro iterations looking for straightforward results were needed to assess if the overall and more ambiguous project structure was achieving its desired scale of impact.

Reflection #5: Material engagement is powerful in making novel play environments

Though select game references were found as inspiration and a starting point for my project, I was looking to construct something separate from most of the existing landscape of

wellness and emotional games. Presenting players with a unique physical interface for play seemed to instill a new openness for experience and creativity. The status quo of what they knew how to interact with could be challenged, giving way for new ideas to blossom. I find myself reflecting on how other forms of materiality could have created different experiences; would a fabric game board have been possible? Could reclaimed materials feature more prominently? Moreover, rather than presenting itself in isolation from our current technologically driven game landscape, could the game be adapted to engage more critically and constructively with it?

Conclusions

At the commencement of this project, I asked: "*what is the feeling of wellness, and how can one play with that feeling?*" Through the design of *ColorFull*, it was found that *wellness* is a concept inherently in flux, but one that can be discussed in a social setting with newfound ease. Searching for a singular definition of wellness appears much less generative than creating an environment wherein the *definitions* of wellness can be cross pollinated. Likewise, the *feelings* of wellness will depend on the same intersectional variables that impact the intersectional wellness concerns of health equity. By providing a space wherein players can describe what it means to be well together, *ColorFull* may yet produce a new - and wholly complex - way of seeing what it means to be well.

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Appendix 1: Playtest 1 Survey

1. What did you think about the game materials present today (board, pieces, drawing paper, etc.?) Were you drawn to something in particular, or did you feel something was missing?

2. Can you describe how playing the game felt as an experience?

3. Did the game cause you to reflect or think about something in a different way? (If so, what?)

4. Did you find the prompts interesting or useful? Ones you did not like?

5. Did the pace of the game feel appropriate to you?

6. Are there any ideas for suggestion or improvement you would like to share?

7. Did you participate in the previous sessions of participatory workshops?
Yes / No

Appendix 2: Post-Playtest 1 & 2 Question Script

(Think-aloud protocol while participants are playing the game)

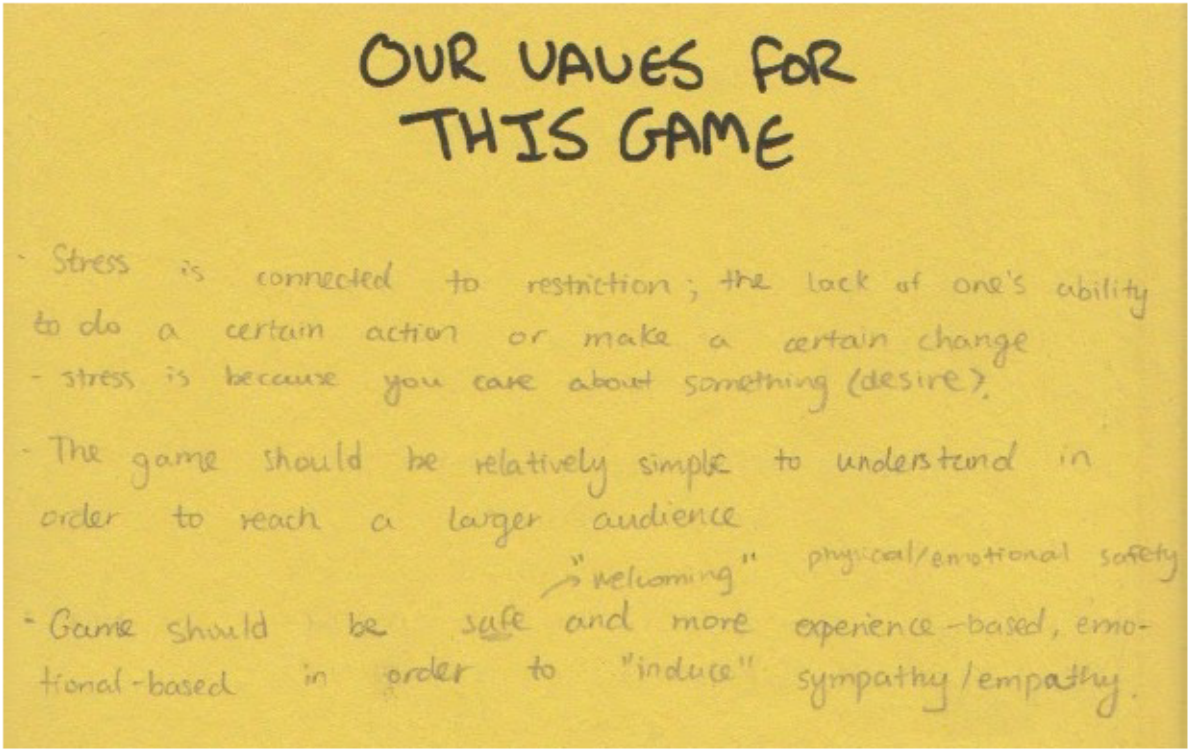
1. Were you confused by anything just now?
2. What do you think this (thing) means?
3. Is this too hard or too easy right now?
4. What do you think is about to happen?
5. Can you tell me what you just did?

(Qualitative responses after participants are finished playing the game)

1. What is something memorable that happened while you were playing?
2. Was there anything in the game that didn't work the way that you had expected?
3. What did you think of the user interface for the game?
4. Did the game's message relate to you personally? If so, how?
5. Were there any particular aspects of this game that you found satisfying?
6. Overall, how did this game make you feel?
7. Do you feel that there is anything missing?
8. What aspects of the game did you enjoy the most? The least?
9. Did you learn anything new after playing the game? Were there any things that the game made you think about differently?

Is there any other feedback you would like to provide?

Appendix 3: Group Value Sheet Transcriptions



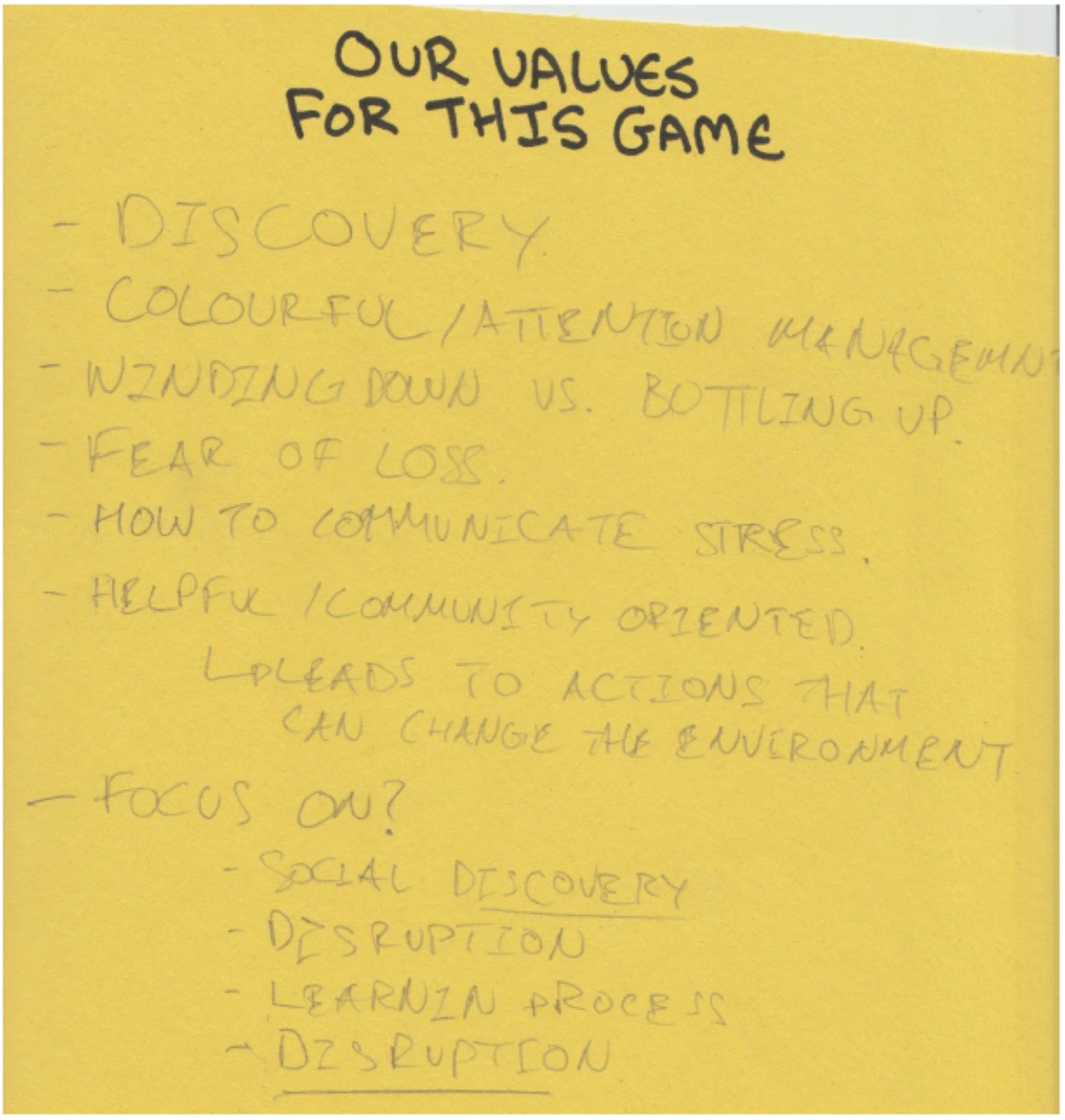
TEAM A: OUR VALUES FOR THIS GAME

Stress is connected to restriction; the lack of one's ability to do a certain action or make a certain change.

Stress is because you care about something (desire).

The game should be relatively simple to understand in order to reach a larger audience.

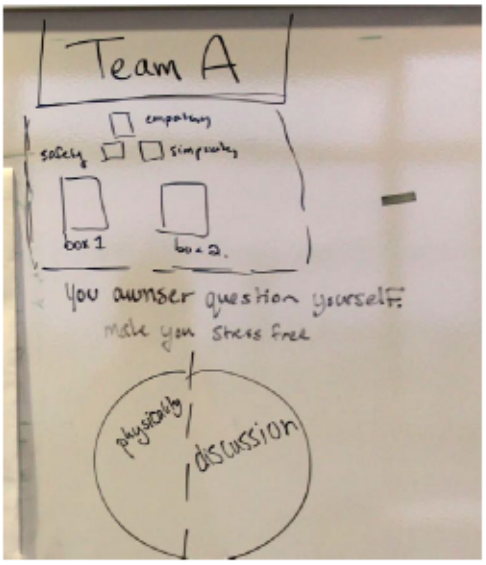
Game should be safe "welcoming", physical/emotional safety, and more experience-based, emotional-based in order to "induce" sympathy/empathy.



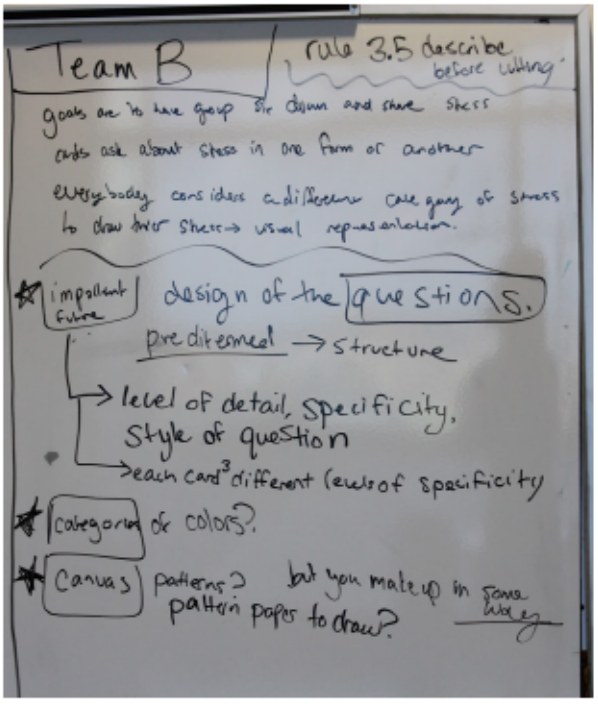
TEAM B: OUR VALUES FOR THIS GAME

- DISCOVERY
- COLORFUL/ATTENTION MANAGEMENT
- WINDING DOWN VS BOTTLING UP
- FEAR OF LOSS
- HOW TO COMMUNICATE STRESS
- HELPFUL / COMMUNITY ORIENTED -> LEADS TO ACTIONS THAT CAN CHANGE THE ENVIRONMENT
- FOCUS ON?
    - SOCIAL DISCOVERY
    - DISRUPTION
    - LEARNING PROCESS
    - DISRUPTION

Appendix 4: Final Group Rule Discussion Transcriptions



- empathy
- safety
- simplicity
- box 1
- box 2
- you answer question yourself
- make you stress free
- physicality
- Discussion



- rule 3.5 describe before cutting
- goals are to have group sit down and share stress
- cards ask about stress in one form or another
- everybody considers a different category of stress to draw their stress -> visual representation
- important future -> level of detail, specificity, style of question
  ->each card 3 different levels of specificity

categories of colors?
canvas patterns? Pattern paper to draw?
but you make up in some way

Appendix 5: Workshop Grounded Theory Analysis Overview

Codes ⟶ ***" " = code, not actual comment***	**Concepts ⟶**	**Categories⟶**	**Group A Theorized Supporting Mechanics**	**Group B Theorized Supporting Mechanics**
9x "feeling" 8x "stress" 2x "safety" 1x "empathy"	Affect	Inner space	- Personal prompts	- Drawing of stress tokens
3x "individual" 2x "value" 4x "self"	Personal			
1x "social" 1x "community" 1x "audience" 1x "share" 1x "group" 1x "players" 2x "connection" 2x "discussion" 1x "communication"	Interpersonal	External space	- Group prompts - Passing of prompts to others - Collaborative goal	- 'Commiserate' and 'Support' of others's stresses to advance
2x "gameplay" 2x "game" 1x "free" 1x "mechanic" 4x "rule" 6x "design" 1x "goal" 1x "representation" 4x "uncertainty (Design)"	Game Design	Game space	- Card phrasing - Extra materials for different game 'editions' - Card sets/ boxes	- Index - Paper - Markers - Prompt phrasing
5x "subject"	Subject			
1x "purpose" 7x "intent"	Purpose			
2x "physical" 4x "material" 1x "color" 1x "visual" 1x "appearance"	Materiality			
3x "scope" 1x "ability" 2x "specificity" 1x "simplicity"	Limitations	Possible Space	- Hypothetical questions - Questions with no one solution - Reflective discussions promoting new ways of thinking	- Changing game board - Symbolic token framework - Reflective discussions promoting new ways of thinking
6x "condition" 1x "possibility" 1x "change" 1x "process" 1x "causation" 2x "disruption" 1x "lack" 1x "issue" 1x "circumstance" 1x "association" 1x "context" 1x "question"	Variability			
10x "action" 1x "help" 1x "discovery" 1x "learning" 1x "sit" 1x "consider"	Actions			

Appendix 6: Playtest 1 Word Cloud Coding Table

(Columns were used to create the clouds).

	GAME SPACE	INNER SPACE	EXTERNAL SPACE	POSSIBLE SPACE
Likes	Like the board! The genie question I liked but otherwise I liked them I like the materials I like the prompts overall The board was beautiful I loved the aesthetics of the board and drawing. I enjoyed that our results were geometric. The wooden wheel was really nicely put together. I really enjoyed the feeling of a wood board and the card actions added adjust the diversity of the game. Very fun. Enjoyed the simple, stress free drawing Enjoyed the small space too loved the marbles and their spots. lovely. I loved all. Especially the constellation	Cosy. It felt refreshing and grounded; down to earth. Felt inspired and laughed a lot. I really enjoyed it.	Our group laughed together a lot, that was great but I feel connected to the players - which is nice Yes. good to see other peoples stress sources and their coping mechanisms.	
Dislikes	I had trouble distinguishing marble colors It felt a bit confusing as regards to rules. There were not enough of them. Maybe petal shape was hard to draw into Maybe a bit quick! (pace)	No, but it did make me think about things that do stress me, if I think about them. So this stressed me a bit. I didn't like the one that asks what is unique about you.	It also lacked a component to bring us together.	
Observations	Not really related to stress. The other questions seemed standard conversation game-y A fun conversation tool. Non invasive sharing and discussion tool When we got certain prompts felt out of joint with the pacing Spacing was a tad difficult for the drawings. It felt a bit disconnected from the starting points of thinking about stressors. Actually the 10000 y-o. Genie was hard.	It made me reflect on how I was thinking and it made me reformulate my thoughts. I am not amazing at drawing so it's not a natural medium for me Hard to say whether I thought differently Interesting, yes. Useful? I find that hard to answer… It was relaxing, but also kind of an aesthetic/ sensory XP felt very individual. I took my own time and set the pace.	Would love to play at a nice dinner party, chilling with friends Especially with friends. It felt collaborative even though we were drawing separately. I felt the loosely directed conversation where people were interested	It got me thinking a bit about how I relate to objects and activities, with did I fours (force) little on people Identity came up It was neat to reflect on how others who have moved incorporate places of origin vs. me taking it for granted But there are not specifically aimed towards stress so it is really up to the players to choose the direction of the game. It made me think about how I cope (or don't cope) with stress on a day to day basis.

Suggestions	rotation Markers made make more satisfying, definite lines (ink gel pens for fine drawing?) I would add some weirder questions? (though we only saw a small sample.) Weirder questions faint gridlines on paper, different drawing materials, more explicit connection to stress Bigger disc is better I felt like it'd be nice to have a variety in sizes of drawing spaces Maybe better alignment / use of spaces, also some form of discussion about the end results / path to end The pace to draw was limiting I don't think so, this time - some massaging fo the rules regarding prompts, drawing and discussion would be good Maybe the decks need to correspond to different stages in the game? Think about the order of the loops + when we get certain cards. Think of going from the inside outward, and which spaces are open for drawing I think a heavier stock for the paper would make it easier to turn Petal shape… ? Maybe "interesting" instead? More space on the board or slightly slower progression might be nice Clarification of left/right Clear up wordings on some cards Bigger circle	Avoid any serious reflection on stress. The reflection even when general is a trigger.	Maybe something that could help me more to interact w/others I think having a designated time to explicitly discuss (if people want), say, after drawing, that would be nice.	
Questions				useful to what I guess. I wonder how different it would feel with people I am not comfortable with though. Curious if more players would make people less likely to participate every round?

Appendix 7: Card Designs


6
Create
6
Teach
6
Comfort
6
Strengthen
7
Follow
7
Hinder
7
Return
7
Lead
8
Journey
8
Consume
8
Watch
8
Catch
9
Frustrate
9
Learn
9
Surround
9
Progress
PEOPLE
Unlimited Lines
OK
HELPS
HOPE

Appendix 8: Playtest 2 Coding Reference

Coding Category Name	Definition	Source
Inner Space	Introspective comments about emotions, sentiments, individual perspectives and values.	Grounded theory analysis
External Space	Awareness of some other person's space, or the connection one has to another.	Grounded theory analysis
Game Space	The practical design impressions, interpretation, and use of the project.	Grounded theory analysis
Possible Space	The ambiguity arising in the participant's discussion of the project.	Grounded theory analysis
Clarity Over Stealth	"In focusing on clarity, games designed to trigger reflection promote conscious learning in contrast to accidental learning. Players know how and why they learned something from a game, because the game will not have been designed to obfuscate this. Players are supported in focusing on real world connections, in order to maximise the chance that game-derived knowledge will not be segregated with "just a game" experiences but integrated with knowledge we use in daily life."	(Khaled, 23)
Disruption Over Comfort	"Reflection is triggered when we are not strictly comfortable, when our assumptions are thrown into question and when we are confronted by situations that challenge our status quo. Games promoting reflection seek to create moments that lead to disruption and thus embrace designing for surprise, awkwardness and uncertainty. Disruption is more likely to lead to reflection than comfort."	(Khaled, 23)
Questions Over Answers	"Reflection… concerns deep consideration of problem spaces and is premised on questioning and revisiting our existing assumptions... less about providing players with clear-cut, singular solutions, and more about creating opportunities for players to explore multiple possibilities and re-imagining problem framings. Asking meaningful questions is more important than providing clear answers. Games that prompt questions invite players to be both introspective and proactive. They demand that players become more self-aware and critical about their relation to games, and more thoughtful about their capacity for critical reflection, action and individual agency."	(Khaled, 22)
Reflection Over Immersion	"...Reflection is precisely not about escapism: it concerns revisiting our previous beliefs intentionally and with a high degree of self-awareness. In the context of games, it requires acknowledging and incorporating the "fourth wall", even if this conflicts with the experience of "being there". Supporting reflection in games calls for privileging reflection over immersion."	(Khaled, 23)

Appendix 9: Playtest 2 Coding

	GAME SPACE	INNER SPACE	EXTERNAL SPACE	POSSIBLE SPACE
CLARITY OVER STEALTH	-It's a nice constraint for people who do like to draw because then they're like, 'oh how do I do this?'			
DISRUPTION OVER COMFORT	-Let's see if I can actually fit it -I wanted to write adventure camp, then I was like oh no, I won't have room -I was thinking about sound but it's hard to do sound with two lines without it looking like a wi-fi signal -...the angle stopped things a few times -It's only one line if you don't lift the pencil. -That's a hard one -I'm kind of cheating a bit here -Line is not defined -Technically if you don't raise the pen...	-I feel so much pressure not to mess things... -Oh, it didn't really work like I wanted -I like these solutions. -I like the negotiation. -I like how afterwards this leaf is probably gonna be the cat thinking about this thing. -I kind of like this, doing multiple prompts… -It's not very nice -I kind of don't want to plan the line strokes. I just want to plan okay, we're going to try to draw this… -I want to see what emerges.		
QUESTIONS OVER ANSWERS	-I thought we were separately deciding what the prompts were? -We just choose one? -Is it portrait or landscape mode? -Is there something to wipe them? -So do we need to write on all of the cards? -So are we going to negotiate what kind of illustration we want to make? -So where should I write it? On which one? -Maybe this petal? -Is that legible? -So, total two lines? Not two lines per player? -So on any of these? It's okay? -Another try on listening? -So then another black card then? -Two lines each? -I mean by "lines"...? -Can we rotate the board? Is that ok? -I wonder if you could put this on top of a lazy susan? -What is the lose state in this game? Not playing it?		-Do we want to go clockwise or? -So who wants to draw? -What are we thinking to draw? What are we thinking to represent through grow and listen? -Who wants to flip the next black card? -Does anyone want to make the other one? -Last line, anyone? -Does somebody want to...? -You want to draw all the lines? -What do we want our prompt to be? -Who wants to do listening with eight lines on a journey? -Should we do two lines each? -Can you do my whole hand in one line though? -How do we draw it in three lines? -What if we drew Journey the band?	

	-If I make a fill, does it count as a line? -Can we keep our bonus lines and roll them over? -So we flip another black card? -I wonder if it should be part of the rules to encourage people to use the other panels. -Two lines each? -Do we know what we are... we have to agree on a picture right? -Can I make one of the drops? -Maybe some motion lines for the other three things?			
REFLECTION OVER IMMERSION	- I think I can do an ear in two lines -It's a meditative process. -It's more like etching than it is something directed. -This is like the opposite of cards against humanity -I was thinking about two heads facing each other, so it's four, five, six, seven, eight. -I'm thinking two bodies, one of them kind of upright and one of them asleep -In this one, we related the small ear to the big ear. -If one leaf has a big cat head, then the other leaves... -I thought of something for making the whiskers. -I might be orienting the rules towards that openness so that, the rules are kind of rhetorically communicating that you don't need to ask questions, you can just play with it -We could also draw another cat in here -I feel tempted to build off of what's already been drawn. - Maybe thinking if we're drawing four prompts per prompt, or four cards per prompt, then I guess maybe it does make sense to move on -I can think of like a seven line version. - These people are already kind of sleeping, so we could do a rainstorm.	-I really like drawing clouds. I would love to draw a cloud.	-I feel like this is a really polite group	-It makes me think of how cuddly my pets are in the morning when they're hungry and want to be fed. -I think about waking up before my partner and having a couple minutes to observe them sleep in the morning -It made me think about process. How learning to listen is a journey. -I was thinking... this made me think of like when people get back from travelling and you get to listen to what they did and so on. -One person talking to another. The other person enjoying what they are hearing. -It made me think of the classic, like talking to plants -...when you want to stay in bed because it's rainy. Could be falling asleep to the sound of rain. -You know when you gently push a cat's ear down and gently tussle the hair...