Playing in the Pursuit of Reflexivity

by

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Abstract

Pillow forts, rivers, shorelines, safety pins, anchor points, bathtubs, toilet paper, baking, Zelda, board games, tattoos, vast seas, marbles, plates,

This thesis is collection of reflections, teachings, learnings and personal creative outputs presented across an introduction and three separate, yet thematically connected, papers revolving around the central theme of personal applied reflexivity in practice that posits play, ambiguity and frivolity as significant for practitioners and makers of design and craft.

The words herein are probably best read like both a story and a poem; and it can be read in sequence or non-linearily, it is a gathering of joy, grief, passion, sadness, and an enduring sense of frivolousness, told as the sum of its three parts. *Pillow Forts: Teaching Design Through Play and Making* is a romp into the cozy centre of design education and theory through a material culture lens which proposes an introductory assignment for spatially oriented design fields. *Before You Go: Ambiguous Play as a Reflexive Catalyst* is a closer examination of the way that games and objects influence biases and proposes a game that illustrates how a reflexivity affects the things that people prioritize, and what they are willing to leave behind. *Applied Reflexivity: Making Objects as Personal Reflexivity for Practice* makes a case for the use of objects in reflexive practice, and proposes a personal, functional methodology for reflexivity that could benefit many fields that have material objects as their enduring product.

The methodology of this thesis is interdisciplinary and spans the fields of human ecology, material culture, design studies and studies on craft practices. The methods used are self-reflective, reflexive, and predominantly autoethnographic where reflection-in-action is used

along the way. The themes explored are linked to creative embodied practices of making, various practices of teaching and learning, and notions around how humans play. While the three papers that make up this thesis provide the structure, this playful poetic thing would not tell the whole story if it didn't gather all the pieces. This thesis is not a single study, it is not an answer, and it may not even be a good question. It came from uncertainty and ambiguities and represents great change and a kind of rebellion.

Keywords: Attachments, Ambiguous Processes, Biases, Craft, Design, Embodied Knowledge, Material Culture, Objects, Reflection, Rhetorics of Play, Positionality

Preface

Some of the work featured in this thesis has been published as complete papers in collaboration with Dr. Megan Strickfaden at the University of Alberta. The first section of this thesis has been published as Stielow, Malcolm, and Megan Strickfaden. 2023. “Pillow Forts: Teaching Design Through Play and Making.” In *Interdisciplinary Practice in Industrial Design*. Vol. 100. AHFE Open Access. https://doi.org/10.54941/ahfe1002972. I was responsible for much of the concept formulation, theorization, and manuscript composition. Strickfaden was the supervisory author and was involved with concept formation, manuscript composition, and was the instructor of the course that the Pillow Forts exercise was devised for.

Appendix C was published as Stielow, Malcolm (2020) “On Rivers and Safety Pins: Exploring Materiality Through Craft.” In *So Fi Zine* Issue 7. This was a collaboratively published special issue of So Fi Zine led by Dr. Rob Shields. I was responsible for the concept formulation, theorization, and manuscript composition of my chapter. Shields published their own piece, but also served as editor for all pieces within the issue.

Appendix E was published as Strickfaden, Megan, and Malcolm Stielow. 2023. “Self Knowing Exercise Book”, In *Here to Cause Problems: A Cripping Masculinity Hacking Guide*. It is a compilation of exercises devised by Strickfaden. I was responsible for the design of the book and graphics, as well as some modifications to and editing of the content.

Dedication

Nothing is a mistake if that's what you're trying to make.

This overbuilt thesis is dedicated the memory of one of the greatest makers I have ever known: Norman, my grandfather, who taught me that if you build something right nobody can ever tear it down.

Acknowledgements

I would like to express my deepest appreciation to my supervisor, Professor Megan Strickfaden, for their limitless patience with my unending string of ideas. Their mentorship has been of the highest calibre and quality and has always been there exactly when I needed it most. This journey would also not have been possible without Professor Rob Shields, whose guidance provided a much-needed spark that will influence my writing for years to come. I should also thank those who donated to the emergency funding campaign for my partner's first surgery and recovery, because without that funding, I may have been forced to withdraw from the program. Special thanks to the care team that supported my partner and I these last few years, including the surgeons, doctors, pharmacists, physiotherapists, and crisis counsellors, whose honesty, ability, ferocity, and humanity made the last few years survivable, and each knew when event the darkest humour could bring some light.

No words could express my gratitude to my wonderful partner Rael, whose courage, grace, stubbornness, and strength made their care possible. Even when every day was worse than the one before, they still helped me take it one day at a time.

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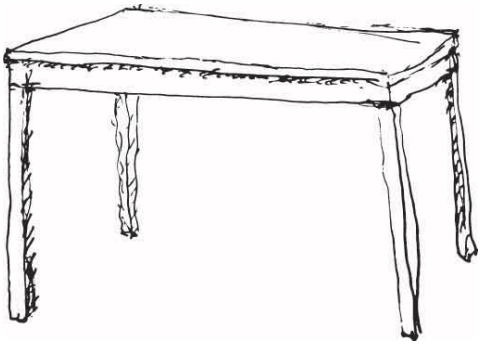

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Introduction: On Rivers and Safety Pins

Play seems like such a paradox as an academic topic. In many ways, it is the perfect area of study: vast, diverse, ambiguous. In other ways, it is also the antithesis of what people think an academic is supposed to do, because it is joyous, boundless, and frivolous. This thesis is a frivolous one. Not in the way that it is somehow useless or without meaning, but it the way that Sutton-Smith describes the "rhetorics of friviloity" (1997, 201), as something contrary. Frivolity is fundamental to play and the complete opposite to it, because it mocks the very things it creates, relishing its own unseriousness. Frivolity is meant to poke fun, jest, undermine, deconstruct hegemonic structures, deny reality and morality, and override the place in the context of values that it builds (ibid., 201-13). As odd as this might seem, frivolity is the exact reason that I wanted to maintain a sense of play in my practice. Frivolity, and its deconstructive nature, is the perfect tool that a practitioner (someone like myself) begins to deconstruct their own contexts and values, and is also the means that practitioners can rebuild their person and praxis. Play, with its frivolous rhetorics, is a great tool for reflexivity, and as a design and craft practitioner, I aim to always have the best tools. This thesis may be thought as frivolous, as the antithesis of a thesis: an anti-thesis. The work contained is a collection of what can only be considered material culture: highlights of some of my personal creative outputs over the last few years. Despite having become one of the most challenging points in my life; having almost nothing to do with my actual thesis work, but entirely complicated by, working on a thesis, this work has become one of the most fun things I have ever done.

This thesis is probably best read like both as a story and a poem, and a thing: "a gathering with the purpose of dealing with a matter" (Heidegger 1971, 173). It is a gathering of joy, grief, passion, sadness, and an enduring sense of frivolousness, told as the sum of its three parts. *Pillow Forts: Teaching Design Through Play and Making* is a romp into the cozy centre of design education and theory through a material culture lens which proposes an introductory assignment for spatially oriented design fields. *Before You Go: Ambiguous Play as a Reflexive Catalyst* is a closer examination of the way that games and objects influence biases and proposes a game that illustrates how a reflexivity affects the things that people prioritize, and what they are willing to leave behind. *Applied Reflexivity: Making Objects as Personal Reflexivity for*

Practice makes a case for the use of objects in reflexive practice, and proposes a personal, functional methodology for reflexivity that could benefit many fields that have material objects as their enduring product.

While the three papers that make up this thesis provide the structure, this playful poetic thing would not tell the whole story if it didn't gather all the pieces. A small zine publication in Appendix C, *On Rivers and Safety Pins* (Stielow 2020) began much of my thinking for this thesis. I had originally planned to work toward an understanding of craft practice in Alberta, but while working on this article, I found a paradox in craft, which led to an inevitable crisis in my connection to craft and making. I realized that my problem with studying craft had little to do with craft itself, and more to do with my position in craft's flow. In fact, I was unsure about my place in a lot of things. I realized that this ambiguity was not uncommon in my life, nor likely any less common in anyone else's, so there had to be a reason why this uncertainty existed. I would later realize that this ambiguity was the emergent space that people needed so they could make lasting changes in their lives. I began to tie this ambiguity to reflexivity and Acceptance and Commitment Therapy (ACT) (Hayes, Strosahl, and Wilson 1999) (see Appendix D) and my own history as a maker. What came out of this, to my surprise, was not a thesis, or a study, or an answer, or even a good question. What came from the ambiguity in my life was what comes from all great ambiguity: great change and a kind of rebellion.

There are only two good things to do when one's mind rebels against oneself: either fight it or join the cause. Fighting it was doing me no good, and when the latest global pandemic hit, it didn't make the situation any better. I lost access to my studio and tools, and the preconceived image of a designer and studio craft practitioner that I had created for myself couldn't stand up to the rebel yell of creativity. To reconcile the two, I would need to break through my biases, and working with Dr. Strickfaden introduced me to "reflexivity" in practice[1] in what I still believe to be one of the best ways I could have encountered it. I now treat *On Rivers and Safety Pins* as something of a position statement for the rest of the research I was

[1] This introduction came as part of instruction when I took an introductory design course [HECOL 250: Design Studies and Practice] with Dr. Strickfaden where the provided a definition of reflexivity from Boscoe (2015), and later introduced many of the exercises later expanded and featured in the *Self-Knowing Exercise Book* (Strickfaden and Stielow 2023)

about to undertake, in that it provided a secure anchor point that I could tether myself when I began to drift too far off course. As is the nature of all publications, it is a snapshot etched in time, subject to the thoughts and biases of the author.

This thesis, in its pursuit of reflexivity, is about understanding and processing my own biases and imagining how I can support others to process their biases. Through this journey, I have moved my anchor point further along the shore to what I believe is a more useful location, and my hopes that my work can help others move their anchor point as well. The more I engage in play and reflexivity, the more I have come to understand that the shoreline is not a single line, but a different one for each person, surrounding a vast sea of things that collect and tell many frivolous stories.

Pillow Forts: Teaching Design Through Play and Making

Pillow Forts: Teaching Design through Play and Making is my first peer-reviewed scholarly paper, presented and published in the conference track *Interdisciplinary Practice in Industrial Design* at *Applied Human Factors and Ergonomics 2023* conference, where it went on to win *Best Student Paper Award* in the conference (see Appendix A). This paper is the first paper in a series of three presented in this thesis. Prior to developing the *Pillow Forts* paper, it was an idea born out of necessity, and to some extent, my own boredom. The pillow fort assignment (see Appendix B) was created as a means of teaching three-dimensional studio-based design techniques from home during the COVID-19 pandemic lockdowns. The goal of the assignment is to have students play with objects in their homes and use them in creative ways in building a pillow fort that meets certain design criteria. The root of the idea came in a meeting with Dr. Strickfaden when I was serving as the teaching assistant for their design fundamentals course. It was barely a notion then, but Dr. Strickfaden encouraged me to expand it and write a protocol for an assignment that we could use for class. The pieces were all there, but to turn them into a thing, they would need to be grounded in a methodology.

The inspiration for the methodology, like many of my favourite things, came to me in a moment of play. In the time after my partner's first cancer-related surgery, they had very limited mobility. Our apartment has a very bad bathroom layout with the toilet paper holder

nearly a meter away from the toilet, so it was difficult to reach even with an able body. We had no choice but to make the toilet paper roll free-range, living its best life on the edge of the bathtub. This resulted in it being frequently knocked into the tub, which while I was cleaning the bathroom is exactly what happened. When you are as frustrated as I was then, any little inconvenience like that feels massive. I fought past the necessary rented assistive devices that supported my partner to engage in daily living tasks to get the wayward toilet paper, which had fortunately missed a small puddle of water in the tub. I heaved myself back to into a crouch and sat on the lid of the freshly-scrubbed toilet, pondering what I should do with the delinquent toilet paper roll. I rolled it up my arm and popped it off my elbow a few times, as one might a baseball or apple. On the last pop, it launched sideways, I bobbled it, and pinned against the tub rail with my thumb in the side of the roll, just a few millimeters from going back in the tub. I held it there for a second, and then an idea came to me. I jammed the toilet paper onto the wingnut of the assistive tub railing, and it became our new multipurpose safety device and much closer toilet paper holder.

It was in handling and playing with the toilet paper that I thought of a solution for what felt like a big design flaw and problem at the time. I believed, as I'm sure most people do, that toilet paper needed to be on the designated holder, and in lieu of that, the only option was roaming free. One might say I had a bias about the position of toilet rolls. In playing with the object, I gave myself a moment of mental space, and in it, an idea was able to move just enough to stop a rogue toilet paper roll from constantly trying to take bath. I assure you; this was a bigger moment for me in my stressed-out, sleep-deprived state than it sounds on paper, but it felt like a win to me at the time. In the coming days, I noticed I was putting too many pre-conceptualized feelings into all my work. When not actively engaged in daily carer responsibilities, I took every moment to think about how I could use my design skills to get myself and my partner through this hard time. I made more small changes in our even smaller apartment and started sparse and random research again. As my partner's condition improved, and I was able to shift my priorities back to making and writing, the connections between the playful interactions with objects, Kolb's experiential learning (1981), and Shields' Tetrology

(2020; 2006)[2], started to take form. I like to say that my thesis truly started not with rigorous study and course work, but with cancer, pillow forts, and playing with toilet paper.

Before You Go: Ambiguous Play as a Reflexive Catalyst

The second paper in this thesis, *Before You Go: Ambiguous Play as a Reflexive Catalyst*, is an exploration into playing through a game that helps practitioners be more reflexive. Prior to writing thesis, I had a few experiences that served as the catalyst for my thinking around gaming and play as source of overcoming barriers. My partner and I were both feeling emotionally stuck in the cycle of recovery and care following their first surgery. They were on the mend but were finding that they couldn't get started on any projects. Activities (such as baking) that previously brought them a lot of joy suddenly didn't hold much appeal. I encouraged them to sit down for awhile and get lost in a game, which always cheered me up. Hoping to challenge them, I suggested a game they hadn't yet had the opportunity to play, *The Legend of Zelda: Breath of the Wild*[3] (2017). For anyone who is unfamiliar, *Breath of the Wild* largely progresses through exploration and combat, but after all the fighting my partner had been through, they were not in the mood for even virtual exertion. They exclusively wandered around the areas of game world with the fewest enemies, gathering cooking ingredients and preparing things for the main character to eat. In-game, this mechanic's intended use is to recover health or stamina during or after a battle. For my partner, they sought out the rarest ingredients to make the most interesting dishes and even went online to research the recipes that yielded the cutest and tastiest-looking dishes. At some point though, my partner began to look at real-world recipes that they could make with their limited real-life stamina. Their research turned to baking recipes, and their foraging turned to our cupboards. Soon, we had a fresh pile of milk biscuits cooling on the counter. For the first time since their cancer surgery,

[2] I had first seen the Tetrology as part of the course taught by Dr. Rob Shields [SOC 634: Material and Virtual Culture] that lead to the zine publication of *On Rivers and Safety Pins*, as well as the expanded version Shields published in the zine as well.

[3] *The Legend of Zelda: Breath of the Wild* is rarely referred to by its full title. It is usually identified by its entry title, *Breath of the Wild*, or frequently online as the acronym *BOTW*. Conversationally, titles in *The Legend of Zelda* series are simply referred to as '*Zelda*' if they are the most recent title. To maintain clarity, but not annoy any fans of the series, I will refer to it as *Breath of the Wild*.

they had engaged in an activity they had loved before cancer, and baked something very tangible, and very tasty.

The *Breath of the Wild* game world is designed to be open-ended. It has certain rules that apply in specific ways; a natural side effect of computers running on strict code. Much like the cooking in the real world, the availability of ingredients and how you combine them dictates what you make. Unlike the real world though, where the possibilities are nearly endless, the game world has only so many options for ingredients and recipes. My partner often bakes for events or occasions, and with a specific purpose and goal in mind. This can be cookies for a holiday, or a cake for a special birthday, but they almost always bake with a purpose. In fact, much of their creative output is for other people. Without any such event, and nothing but medical appointments on our calendar, my partner was uninspired to bake or create in any way. Something about playing *Breath of the Wild* for a few hours removed the event prerequisite in their mind. I would speculate that the shortened loop of cooking in the game allowed them to try things quickly, and made failures seem less daunting. Failed cooking attempts in-game made my partner tun to the internet for help, and I believe this is where their thinking shifted from digital food to physical food. The research was outside the game world and crossed over with actual baking recipes and pictures of real food.

Virtual play became abstract concepts, then probabilities, then became very real, very concrete biscuits (which were concrete ontologically, texturally, they were flaky and delicious). This rapid transition through the four ontological states (Shields 2006) was sparked by play, the subject of the *Before You Go: Ambiguous Play as a Reflexive Catalyst*. Of course, my partner didn't immediately start baking every day and was not suddenly full of joy and happiness but it wasn't an isolated occurrence either. Sutton-Smith might label this as the play as 'solitary play' creating a "rhetoric of self" (Sutton-Smith 1997, 10–11). This is an example of how play creates ambiguity (ibid., 1), but beyond that, it is an example of how ambiguity can create emergence (Shields and Vallee 2012, 59–60; Sandberg 2019, 7). This solitary play started a process; one with a few good steps, and a great many more setbacks. We both would need to continue putting in work to ensure that the process kept moving and growing, with the goal of one day getting back to something that we could call our 'normal'.

Perhaps the newest *Zelda* title may provide new insight, or perhaps we will need to find a new avenue of play[4] to make a new type of ambiguous space, but in that play I saw it as a first step in a long, emotional recovery from cancer. *Before You Go*, a game proposed in this second paper, is designed to create a similar playful deconstruction of preconceptions while connecting the players to very real thoughts and emotions with the goal of sparking personal reflective thought about the people and objects around them. Much like *The Legend of Zelda: Breath of the Wild* was for my partner, it is meant to create ambiguous space and be a catalyst for emergent thought, starting a process that will always need work, but will hopefully be rewarding in the end. As I write this, my partner is playing *Pikmin 4* (2023), and we had spaghetti.

Applied Reflexivity: Making Objects as Personal Reflexivity for Practitioners

Reflexivity in academia often revolves around the cognitive effects language and positional labels, and that is very much part of the focus of the third paper *Applied Reflexivity: Making Objects as Personal Reflexivity for Practitioners* but as demonstrated in *Pillow Forts* and *Before You Go*, objects can also play a significant role in the deconstruction and acceptance of biases and positions. The language of reflexivity is often explored and presented in the context of qualitative research, particularly in the health and social sciences (Olmos-Vega et al. 2023, 241; Lumsden, Bradford, and Goode 2019, 1). While there is always the potential for more reflexive work to be done in many fields, I believe that there is a whole world of applied and practice-based fields that are currently underserved, especially those with concrete, physical products such as craft, engineering, business, and design.

Karen Lumsden (via C. Wright Mills), talks about reflexivity as a form of intellectual craftspersonship, because we are personally involved in every project we undertake (2019, 1). Since I come from a craft background, I see many things as extensions of craftspersonship. Craft knowledge is tacit knowledge (Dormer 1994, 16) and tacit knowledge is personal knowledge (Polanyi 1966; 1958). It is something learned through action, and practice, and

[4] I also introduced them to *Stardew Valley* (Barone 2016), which seems to more habit-forming to both of us than it is inspirational for cooking. It does seem to have a greater effect on general mood and non-food-related making.

eventually becomes "instinct" (Dormer 1994, 16). That isn't to say that craftspersonship is ever without intention. While the actions and skills may become easier and more instinctual, a good craftsperson never allows their practice to stagnate, continuing to work at it and elevate it, even as parts of it become second nature. I never viewed craft as something you do. To me, craft is a part of who I am and a part of other craftspeople as well. Craft as part of craftspeople equates into a set of skills that are both informed and expressed by the person involved. Since a craftsperson cannot separate the self from any reflexive relationship (Wilkinson 1988; Pillow 2003), craft can almost be thought of as material-based reflexive practice. Not everyone considers themselves a craftsperson; however, that doesn't mean they don't have similar reflexive relationships and reflexive practices in their life. Design, research, education, even baking: any relationship where the practitioner has influence over but is also changed in its wake (Finefter-Rosenbluh 2017; Mauthner and Doucet 2003; Pillow 2003).

As with the theory and methodology from *Pillow Forts* and *Before You Go* in this poetic thesis thing[5], the path I took to find reflexive practice was far from a straight line; it is full of knots and eddies[6], and I expect it to continue this way throughout my life. At first it seemed to be a line that first passed though the *Humble Bundle*[7] digital storefront, which sells large 'bundles' of digital content for very cheap. Originally, these bundles were just collections of cheap video games, but more recently they have diversified into also selling bundles of software and e-books. Being the big gamer nerd that I am, I can't help but browse what content is available through the *Humble Bundle* every few weeks, even if I'm not going play any of them for lack of time. While I was sifting through *Humble Bundle*'s offerings one month, I came across an e-book bundle that was all books on mental health. I downloaded them, and was happy to find two workbooks on Acceptance and Commitment therapy in the bundle: *Reclaim your Life* by

[5] This description as both thing and as poetry relies further on the Heidegger's *Poetry, Language, Thought* (1971), not just as the previously mentioned collection or gathering, but also to the poetic creation and thought described in other areas of the book.
[6] See Appendix C for more on knots and eddies.
[7] *Humble Bundle* is the name of a for-profit company that sells compilations of digital content, option with a low price, or 'pay-what-you-want' model, with a portion of all proceeds going to charity. The combination of the low price and built-in charitable contribution model is what originally led to the 'humble' moniker.

Carissa Gustafson (2019) and *Acceptance and Commitment therapy for Anxiety Relief* by Rachel Willimott (2020). With my partner's cancer treatment and impending surgery, I never had the chance to fully engage with these books, but they were my first point of exposure to ACT. The real moment of clarity happened when I sought crisis counselling through the Cross Cancer Institute's Psychological and Spiritual Services. My assigned counsellor introduced me to ACT, and the first-hand experience felt like what I had always wanted to achieve through reflexivity. I took to ACT well, and though I wasn't supposed to peek behind the therapeutic curtain, my frivolous mind had to know how it all worked.

The methodology proposed in this third paper, which I have come to call *Applied Reflexivity* is meant to help practitioners become more reflexive. The applied reflexivity methodology has its roots in ACT. It may help with "psychological flexibility" (Hayes and Strosahl 2004, 5); however, it is not intended for therapeutic use, and is not meant to be an extension of the work in cognitive behavioural therapies. It also may be useful in qualitative research, like other reflexivity methods and methodologies, but is not intended to supplant the work already in that field. Applied reflexivity is my personal response to my perception of the linearity of practice, and how the line that was once a river (Stielow 2020: see Appendix C) now can be likened to a vast ocean.

Whether it was of my making or a product of my life to that point, I was once very stuck in a linear way of looking at craft and design. Even my understanding of the reflexive exercises I completed while working with Dr. Stickfaden were still goal-oriented and directional (see Appendix E). I was still looking for a single reflexive path forward with linear stages, as one might navigate the *Stanford d.school model for Human Centred Design* (Balcaitis 2019). The first step in the Stanford model is to empathise, the second step is define, the third is ideate, the fourth is prototype, and the fifth is test (ibid), and while the model has a notation on it saying it is not strictly linear, it certainly gives the impression of a clear progression. The first step, focusing on empathizing, could be akin to some kind of reflexivity whereby designers could "gain insights and deep understanding into other's values and beliefs" (Joyce Thomas and Strickfaden 2023). Yet the Stanford model seeks to "understand people within the context of your design challenge" (Balcaitis 2019) which creates an unacknowledged first step: defining the

context of the design challenge. While design process models like Stanford's are "relatively general" (Strickfaden and Thomas 2022, 26) it still highlights how there is room for bias to enter the design process, even before the first step. This had the same problem as Jacobsen and Mustafa's exercise (2019), where using a predefined context sets the practitioner up with biases that may not even be their own. It also shows the fatal flaw in trying to think of reflexivity as a single, linear, multi-step process[8], which I will borrow another design concept to explain.

The problem was that I was looking for a straight line through an enmeshed (Ingold 2013, 123) world of things. In *Elements of Design*, Hannah characterizes Rowena Reed Kostellow's understanding of three-dimensional design, one element of which is "lines in space" (Hannah 2002). In many ways, linear models represent the "sterility, as well at the single-track logic, of modern analytic thought" (Ingold 2016, 2), but in the three-dimensional world, they must occur in 'space'. The question needed to be asked: what space does this line exist in? In this sense, functionality does not mean that the objects used for reflexivity are limited by or even related to their function. The design adage 'form follows function' (2010, 45) applies similarly here as it does in Miller's book *Stuff* (ibid.) because the form of reflexive output is not their social or cultural function, but their functional relationship with their maker. The formation of a context that is 'material', 'social', and 'cultural' falls into the interdisciplinary field of material culture. Miller argues that "Material objects are a setting" (ibid., 50) and that they are not merely created for a use within a context, but they *are* the context. Objects are not subjects (ibid., 78), nor are they artefacts (Ingold 2013, 20), both static objects of academic study. While Miller staunchly refuses to put any clear limitations on that which can be thought of as an object in material culture[9] (2010; 1997), but they are ideas made "material" and "cultural" according to Thomas (2007, 15). Shields (following Deleuze) argues that "objects are the point of indiscernibility of two distinct images, the actual and the virtual" (Shields 2006, 285), which is similar to Ingold's diagram (2013, 21) depicting his understanding of making. For Ingold, images

[8] This also calls to mind Sterman's (2002) critique of models, and how all models are inherently wrong due to their limited, reductive way of looking at complex things.
[9] This is largely avoiding the argument between 'object' and 'thing' by Heidegger (1971) or Ingold (2013) for the time being. Refer to the introduction for more on material culture, objects, things, and making. Additionally, making will be further discussed as part of the 'concretization' pathway in the next section.

are a point in the flow of consciousness, and objects are a point in the flow of material. Effectively, an object can be almost any real thing that inhabits a material or virtual space. Combining Ingold's and Shields' interpretation shows that to 'make' something is to create both the concrete object, and the virtual image, so making produces observable concrete consequences [10] that both have, and produce, their own context. The process of making "give[s] birth to forms that are no longer tethered to their makers" (Ingold 2020, 269), which allows those objects to be things that move alongside us in the flow of time (Ingold 2020; 2013).

Time, though, has its own constraining linearity to it. I found it immensely valuable during the worst of my partner's cancer treatment to sort every part of our daily needs in terms of priorities, and the practice has stuck with me. When I was most deeply in the role of a carer, people were often shoulding[11] on myself and my partner. Frequently, people would tell me that I should finish my thesis program and get it out of the way. Or that I should be there for my partner in sickness by trying crystals, using lavender, and eating all manners of foods that are thought to cure cancer. I wouldn't tell them I didn't have time to finish my thesis, it was not my priority. I had decided long before anyone knew of my partner's illness that my priority was to my partner's health and wellbeing, even at the expense of own health. I also politely refused the offers of crystals, which is also related to by priorities, but in a very different way. Establishing firm priorities gave me a great sense of ownership over both my decisions, and the things I had little choice in. Instead of feeling like I was being taken along for a ride, I felt like I was choosing to ride along, which made a terrific difference for me. It gave me the words I needed to form healthy boundaries in my life. There is a flip side to this technique, however. Acting against my priorities made me feel a tremendous sense of guilt (and sometimes felt outright stupid). When I convinced myself that it wasn't my priority to go to the dentist and fix my teeth, or that taking

[10] In *The Big Book of ACT Metaphors*, Villatte et al. assert that two things are required to make an efficient therapeutic metaphor: people must be able to observe the concrete consequences of their actions and the events in the metaphor must match the context to which they are applied (2014). While applied reflexivity relies more on material than metaphor, concrete consequences of actions and results that match the context to which they are applied are both key features of the proposed methodology.

[11] This is a colloquial term to describe how people project their often-toxic expectations toward medicalized people and their carers, used here as it is in our experience in cancer support groups. More on shoulding in the fusions section, page 72.

a few minutes for myself to shower or eat wasn't my priority either. A feeling of guilt can be a powerful indication that something is working against established priorities or detached from personal values. Even using guilt as a metric, values are often difficult to isolate because by the time a person feels the guilt, it's likely they have already acted against their values. Priorities are much more easily identified and applied to material world situations through decisions and choices.

Being able to act on choices in a way that are in line with a person's priorities can be severely affected by their positionality. Coburn and Gormally argue that a person's position may determine it they get a "seat at the table" or not (Coburn and Gormally 2017, 170). This refers to the one of the aspects the most disastrous side effects of acting unreflexively — privilege (Oddy 2021). One thing that continues to be a barrier to people acting reflexively is that each person lives in dramatically different contexts (or habitus according to Bourdieu, 1984) and a multitude of interactions with many different people (or field according to Bourdieu, ibid.) occur within these contexts that are also dramatically different. As such, it is not easy for a person to find a straightforward path between contexts and interactions. Reflexivity may come down to a person acting toward their personal priorities, and their choices may be understandable within their contexts, but it becomes a very large problem when they attempt to hold other's decisions up to those same criteria. In every situation there is the same number of choices for everyone. There is only a single choice between two options, even if these are both bad options. In design studies, there are already folks working toward overcoming forms of privilege through design justice[12]. In the last few years, I have had conversations with people who have told myself or my partner what we should be doing, that being privileged comes down to having more choices. In working toward reflexivity myself, and working on *Applied Reflexivity*, I have decided that this is not the case. Privilege does not necessarily provide anyone with more choices; it provides choices that are more in line with their most valued priorities. As an example, while someone without the privilege of food stability may value fresh ingredients when they cook, they may not

[12] Design justice is a large an varied field with many practitioners contributing unique voices; arguably too large to cite individually here. Colloqate Design, as practitioners of design justice, have compiled a list of resources that provide a starting point for further reading ("Resources" n.d.).

be able to choose fresh foods because they are not available in their area. The choice is still part of their priorities, but they likely value their financial stability over travelling long distances to access fresh food. Someone with the privilege of both financial stability and fresh food access doesn't need to use those making their choice, instead deciding between other priorities, like which type of food contributes better to their priority of personal health versus flavour. There are hard limits on a person's time, money, and energy, but people with lower limits may not get to centre their decisions in their highest priorities, having to instead make a choice lower on the list, potentially leading to guilt about things that may be outside of their control. Privilege is the ability to use your priorities indiscriminately, which ultimately can lead to bias as those priorities leave the conscious mind and become instinct. The goal of the applied reflexivity methodology presented in the third paper is to create space for reflexive decisions to flow, regardless of the contexts these come from. Reflexivity itself does not pass judgement on the person practicing it, and one of the hardest biases for me to overcome in this journey was that reflexivity is an ongoing personal, subjective endeavour, not a moral one.

Thesis Summary

This thesis is organized in four sections beginning with this introduction. Three separate, yet thematically connected, papers follow this introduction. These three papers are intended to be separate poems written as the outcomes of literature read, of reflections, teachings, learnings, making, and reflexive praxis conducted for this thing: the matter of a thesis. Like all theses, these works do not in any way represent the totality of thought and creative endeavors that I engaged in over the years of working on my MA. The first of the three papers herein, *Pillow Forts: Teaching Design through Play and Making*, is already published whereas the other two papers, *Before You Go: Ambiguous Play as a Reflexive Catalyst* and *Applied Reflexivity: Making Objects as Personal Reflexivity for Practitioners,* will be submitted to journals for publication following the oral exam and revisions for publication. On one hand, the three papers are presented in a specific order due to the nature of written documents, however, the papers can be read in any order that a reader wishes because each paper is self-contained. Although the three papers seem like they are one river, they are actually part of a vast sea and can be understood independently or in a non-linear way. On the other hand, the three papers inform

one another and are intrinsically connected through the concept of playing in pursuit of reflexivity. Playing in the pursuit of reflexivity, at the core, is a paradox. Reflexivity can be pursued, but never caught. Like being adrift in the sea, where an anchor may provide a temporary stay, but will not hold forever.

In closing, this thesis is positioned interdisciplinarily[13] and brings together human ecology, material culture, design studies, craft, and making. There are relationships between these fields of study, beginning with each of them being interdisciplinary and each considering creativity, self-reflection, reflection-in-action, (sometimes) reflexivity, and more holistic complex perspectives of lived experience (on, about, with or through people). Relationships among people, biases, values, objects, and spaces are all ambiguous by both nature and design, allowing them to be appreciated with the depth their interconnectedness demands. Within this thesis, I am proposing frivolity itself. I am proposing that people explore and examine the intricate paradoxes that exist across many fields and see the ambiguities as an opportunity to act reflexively. I am proposing methodologies for practice though play, yes, but I am also proposing pillow forts, games, pins, tattoos, and poetry. At the very heart of design, human ecology, craft, education, and material culture, I am proposing that ours be a frivolous profession.

[13] Interdisciplinarity and interdisciplinary practice has been greatly expanded in recent years through the complexity of problems and the readiness of global connections; for further reading see Keestra (2022).

Pillow Forts: Teaching Design through Play and Making

[1]Abstract

A pillow fort is something that many people will remember from their childhood yet tucked between the cushions there is tremendous potential for teaching valued information about three-dimensional and spatial design. Pillow forts is a proposed design studio assignment where theories that include elements, principles and processes related to industrial design, architectural design and spatially-oriented design fields are taught to students engaged in post-secondary education. The aim of this paper is to report on the methods and implementation of a pillow fort assignment in a design foundation studio course. This paper also presents the ontoepistemological methodology behind this deceptively simple assignment. Students are taught fundamental theories around three-dimensional design and then given a simple design goal to make a pillow fort in their living environment using only the objects they have in their immediate environment. By creating an opportunity for students to work with key theories of three-dimensional design, working through the design process using the languages of play, and making in their living environment, students can develop a deep and more holistic approach to designing without even realizing that is what they set out to do.

Keywords: Design, Design Education, Design Theory, Making, Methodology, Ontoepistemology, Play, Reflexivity, Three-dimensional Design, Visual Analysis

Introduction

A pillow fort is something that many people will remember from their childhood yet tucked between the cushions there is tremendous potential for teaching valued information to junior level students in foundational courses including industrial design, architectural design and spatially-oriented design fields for students engaged in post-secondary education. This paper

[1] This paper is a previously published work, and a has been slightly modified from its published version to fit the formatting needs here. Authorship details have been moved to the preface, page vii

highlights an assignment where theories that include elements, principles and processes about three-dimensional design and spatial design are taught. The aim of this paper is: (1) to report on the methods and implementation of pillow forts; and (2) explore the ontoepistemological roots behind this deceptively simple assignment. We begin with part one where we describe the class assignment including our learning objectives, the theories embedded in the assignment, guidance for the pillow fort construction process, and then how we conducted the critique. Part two delves into a discussion of the ontoespistemological roots of the pillow fort assignment including a detailed description of a methodological process where students develop design skills including: seeing and thinking like a designer, iterative play, making, documentation, visual inventory, visual and spatial analysis, and engaging in personal reflexivity.

Method & Implementation of Pillow Forts

Pillow forts is a simple assignment to administer but has a carefully constructed learning progression that is designed to bring out skills and techniques taught in an introductory studio design environment. Fundamental theories around three-dimensional design are taught and then students are given the simple design task of making a pillow fort in their living environment using only the objects they have at hand. With relatively simple goals and no required materials beyond what students have, it can be an excellent break in an otherwise dense course curriculum. The method and implementation of pillow forts is divided into three distinct steps: (1) introducing the pillow fort assignment; (2) constructing the pillow fort; (3) critiquing and presenting the pillow fort.

Step 1: Introducing the Pillow Fort Assignment

At the heart of the pillow fort are foundational theories in three-dimensional design. We began by describing and interpreting Rowena Reed Kostellow's theory outlined by Gail Greet Hannah (2002)that includes nine three-dimensional structures, relationships (or hierarchies) within these structures, and other well-known elements of three-dimensional design. Figure 1 summarizes the theories used for the pillow fort assignment.

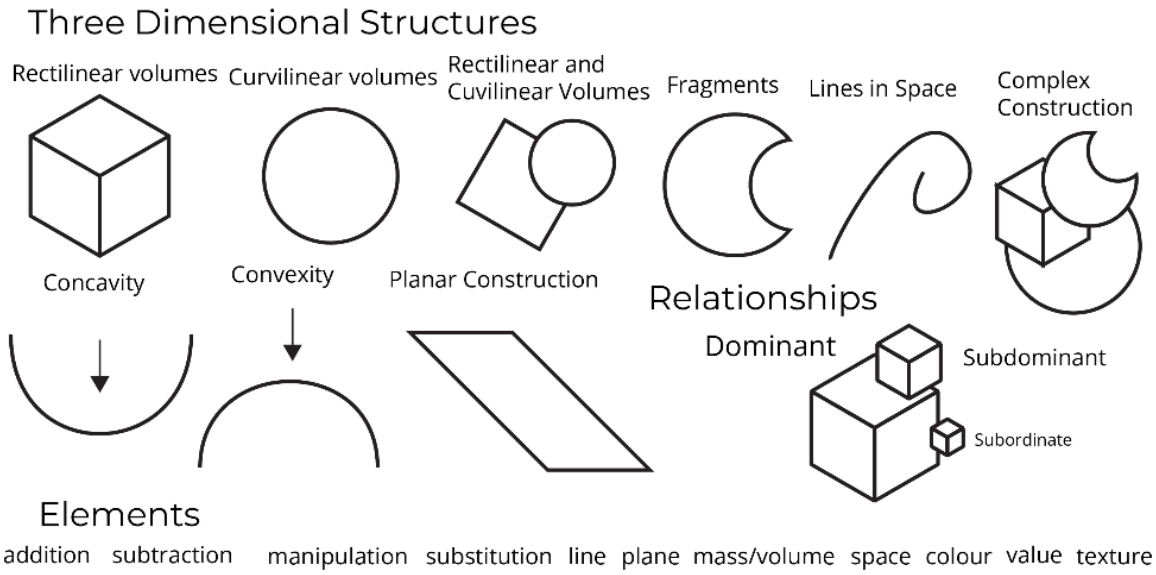

Figure 1: Summary of the theories used for the pillow fort assignment

Combined, the three-dimensional structures, relationships, and elements create a more holistic way of examining objects within spatial situations. Although there is no comprehensive way of teaching or learning structure with space, we believe that these theories provide an excellent introduction to junior level students.

In the weeks prior to this assignment the students were taught gestalt theory and the elements of two-dimensional design, which sets the stage for covering three-dimensional design theories. Along with lectures on the three-dimensional design theories we engaged in in-depth discussions focusing on how the theories related to everyday examples (e.g., furniture, clothing, products). These lectures and discussions were followed up in the studio environment by having the students look at and categorize a variety of three-dimensional hand-made models (see figure 2).

Figure 2: Examples of the three-dimensional hand-made models

Figure 2. Examples of the three-dimensional hand-made models

During our discussions and when categorizing the three-dimensional hand-made models we asked the students to look for the three-dimensional structures by determining what the dominant structure was and then looking into the subdominant and subordinate relationships within each model. Throughout the students' exploration and categorization of the models and everyday objects, which meant the students' pulled additional examples from the classroom that further connected the theories to the environment. By looking at and categorizing the models, the students are beginning to display their individual and collective understandings of the theories so they are better able to explore and incorporate these into their pillow fort.

Step 2: Constructing the Pillow Fort

This is where the iterative play begins. Constructing the pillow fort is simple: students are asked to go to their current living environment is and build a pillow fort out of any objects that support creating a three-dimensional space that they can crawl into. The central rules are: the pillow fort needs to use a variety of materials that help to explore the three-dimensional structures (e.g., sheets/blankets that are planar construction, broom handles that are curvilinear volumes, seat cushions that are rectilinear volumes, etc.); the pillow fort must be large enough to fit at least one person inside (otherwise it is not a pillow fort); and the process of making the pillow fort must include playing and having fun.

It is important to note that the circumstances of each students living situation can be vastly different, and so encouraging students to make the best out of what they have is key. Are they living in a student residence? If so, consider the different spaces in the residence, for example, consider invading the common room and making the pillow fort there (as long as they won't get in too much trouble). Are they living with their parents? Perhaps there's a diverse range of furniture and pillows that can be used. Are they staying on a friend's couch? Couches have cushions and other furniture in the room could be brought in to bring variety to the pillow fort. Along with a variety of different physical living situations, there are also different social situations. For instance, consider enlisting the help of a roommate, enlisting a friend or family member, or even consider making a pet-friendly area in the pillow fort. Flexibility is required of both the student and the instructor in this assignment. There isn't a right answer to the question of how to make a pillow fort. There are no right objects. In fact, the fort doesn't need to include a single pillow, despite the name. Ultimately the pillow fort assignment is a little bit of a "wicked design problem" (Buchanan 1992) that is best approached by playing with and through potential solutions.

Along the way and/or after the students have constructed their pillow forts, they are asked to photograph, sketch, and otherwise document their fort thoroughly. This documentation should have at least one overall shot (with a person and/or pet in the pillow fort for scale) and close-up photos or sketches that represent the theories. In order to present and critique the pillow fort assignment, the students are asked to make a well-designed poster using their photographs, sketches, and notes as content.

While constructing the pillow fort might take a single night, it is ideal if students can build it in stages and potentially leave it up for a while. In this way, across a week or two, the students can take time to play and be more actively engaged in the process including deep reflection on their learning.

Step 3: Critique and Presentation

The pillow fort assignment is meant for a studio environment, and whether it is delivered online or in-person, presentation and critique maintain pivotal roles in the design process. Designers

regularly submit their work to the approval of others. In the world outside of education, this often isn't in a formal critique. Critique comes in many forms, often through casual conversations with peers, submitting work to a supervisor, or putting something out to the world and asking people to show their approval with their own hard-earned money. Interestingly, the students may encounter critiques from their friends or family before they come back into the design studio. We encourage them to talk with their peers, friends and family members to get tuned into discussion points for their more formal critique in studio.

In his book Art Critiques: A Guide, James Elkins (2014) reminds us that critiques are not tests, even though they have evaluative properties (p4). Critiques are not simply conversations, but they should be conversational, not definitive (ibid, 6). While there is no right way to hold a critique (since critiquing has no clear rules) it is important to establish expectations before each critique. Most design instructors will agree that, "criticism passes judgement, critique poses questions" (Christensen 2016). In our critique for the pillow forts, we ask our students to discuss some of their key decisions, and to highlight the three-dimensional structures, relationships, and elements. We asked the students many questions including, for example: Which of the three-dimensional structures were the hardest to find? Do the hierarchies change based on where you're viewing your pillow fort from (above, below, side, back, etc.)? What were your limitations based on the materials you had at hand? Are there certain materials inherent to specific parts of the theories?

In general, an open-floor styled critique was used for the pillow fort assignment to continue to promote play. The students were asked to put their posters up and then mingle around looking at each other's posters and connecting with common problems, solutions, and questions. Following this, the students were each asked to present their work capturing the highlights and examining the limitations of the three-dimensional design theories. The pillow fort was graded based on visual evidence of exploration, the content displayed on the poster, and the questions presented during critique.

The three steps outlined here that make up the method and implementation of the pillow fort illustrate that deep learning is involved in the simple assignment of making a pillow fort. The next section elaborates on this deep learning.

Deep Learning Though an Ontoepistemological Methodology

The pillow fort assignment is created to support students to learn specific design content, in this case foundational three-dimensional design theories; however, it is also created to push students towards learning design processes that can be taken into other projects. The deep learning that our students engage in is described through an ontoepistemological methodology (see figure 3) that's behind the pillow fort assignment.

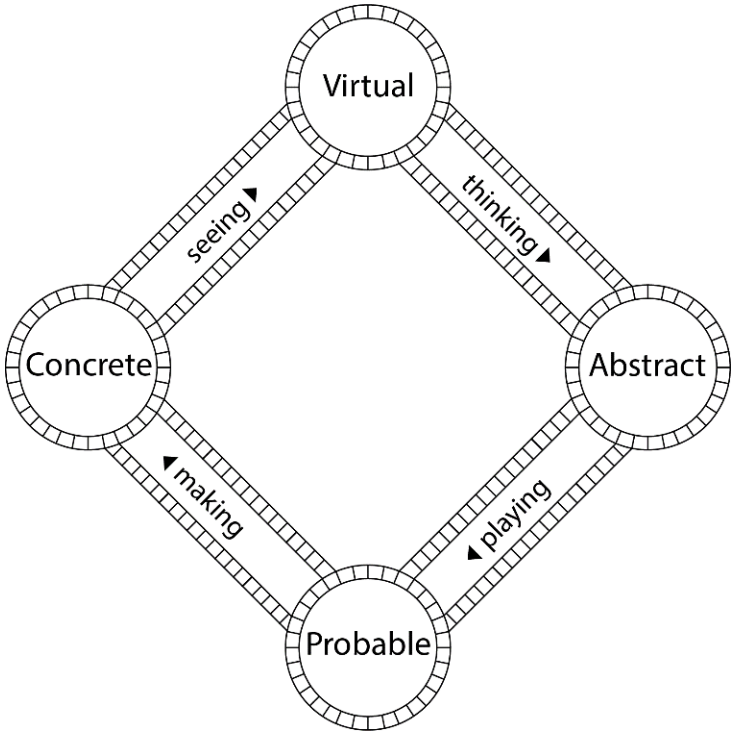

Figure 3: The ontoepisemological methdology

The central concept within this methodology is that the students become more aware of themselves as a designer, which is supported by the context of the assignment within their personal living environment. Although many design process methods, such as the Standford d.school's Design Thinking Process (Balcaitis 2019), start with empathy as their first step they do not provide specific ways to achieve greater empathy. One way that empathy can be better

created with end-users and stakeholders is where “the designer is required to understand themselves in order to design better for others” (Strickfaden and Thomas 2022, 26)

The pillow fort assignment supports the students to explore and work through their own ontological states in experiential, three-dimensional, goal-oriented, and play-driven ways. Students begin with personal reflexivity and self-knowing in order to identify their biases when undertaking design for others. As Standford d.school’s Design Thinking Process is directed mainly toward designing for others, but without developing the designers understanding of the self alongside this, the designers (whether students or seasoned) will undoubtably unintentionally include their own values, beliefs, and biases into the design process.

The ontoepistemological methodology behind the pillow fort assignment combines Kolb’s experiential learning model (Kolb 1981), the usage of Kolb’s model in deep learning (Gee 2009; Ryan, Costello, and Stapleton 2012), and Shields’ Tetrology (Shields 2006) interpreted through a design and material culture lens. For consistency, our methodological diagram is also made to look like a fort. The four major ontological states of Shields’ Tetrology are the towers. They act as points of entry, exit, and rest. The transitional actions between, interpreted from Kolb’s model, spans the distance between the ontological states as the wall-walks atop the wall. These serve as the means to move between the states while still being actively within the process. Kolb’s model uses four abilities for these transitional stages: “Concrete Experience, Reflective Observation, Abstract Conceptualization, and Active Experimentation” (Kolb 1981, 235–36). The four ontological states of existence outlined by Shields, “Concrete, Virtual, Abstract, and Probable” (Shields 2006, 285), line up with our ontoepistemological methodology very closely, but needed a little shift. In our methodology, we interpret Kolb’s “Concrete Experience” as ‘concrete’ followed by the experience that we identify as ‘seeing’. Kolb’s “Reflective Observation” now takes two steps, with an ontological state in the middle. We believe that the first thing a student does is ‘see’ something into the virtual space, and then they ‘think’ about them into abstraction. This also incorporates a portion of Kolb’s “Abstract Conceptualization”. Kolb’s “Active Experimentation” is replaced by ‘playing’ and the generation of probabilities, which is more of a change in vocabulary than a change in the process, as “Active Experimentation” has a similarly generative nature that incorporates both the formation of abstract concept and the

testing of the new concepts. Finally, a return stage in which probabilities are made concrete though 'making'.

Our ontoepistemological methodology creates a strong foundation for personal understanding, wherein:

- students gain experience;
- students can enter or exit the process from any ontological state;
- a virtuality (e.g., a photo taken with a phone) can spark an idea or abstraction;
- a probability (e.g., an illustration handed to them by a colleague) could be used to make a (concrete) prototype;
- anything in this process can spark new ideas.

Each of the actions has a natural progression toward the next state, but it is not a strictly linear relationship. As with other design methodologies it is iterative: this process can be deconstructed, used in part, or used in reverse. Each action stage has an eddy-like quality of allowing movement in either direction between the states, especially play. As with eddies in water, the flow from one state to the next may be temporarily interrupted, or even flow backwards, but it will eventually move on or return to a normal flow.

By combining Kolb's strictly linear model and Shield's Tetrology into our ontoepistemological methodology, movement between states is supported. That is, when working in the pillow fort assignment, students experience an overall direction of movement while still accounting for activities that may move something back to a previous state (e.g., a pillow for collapsing because making didn't go so well). The process of engaging in the pillow fort assignment provides space for student to develop their own flow while still giving a solid goal to keep them moving forward in the process. The following subsections deconstruct the five pillars of our ontoepistemological methodology: seeing, thinking, playing, making and reflexivity.

Seeing

Seeing like a designer includes all forms of perception in some measure: touching, smelling, hearing, and even taste because we all experience the world in an embodied way (Gibson

1966). Seeing like a designer could also be called perceiving like a designer, or even designerly perception. Before students can engage with the three-dimensional design theories they must be able to identify these elements in other concrete environments and virtualize them using some means of perception. This is why we begin by describing the theories, and then using everyday objects and small models as examples. Moving the assignment into the students living environment shifts it further. One of the major advantages to using a personal living environment is that it's a concrete entry to a design process that is familiar and safe. Students know the objects in their personal space and how they are used, and don't shy away from interacting with them. While using personal objects potentially makes students more subject to biases and key details being overlooked, the trade-off is that students will have the chance to reframe the use and interpretation of these objects. In contrast, if students were just presented with objects in a classroom, and asked to build a pillow fort from them, the students may not have seen or used the objects before and would have to make new associations with the object. This is where the beginnings of seeing like a designer happen. Shields characterizes memories as a virtuality, as things that are virtual are both ideal, yet still real (Shields 2006, 285). What students are creating by playing towards a pillow fort is a catalogue of short-term memories. Once the students begin to see objects that match with the three-dimensional design theories, they will create virtualities of those objects in their mind that are separate from the virtualities they already have of that object. Once they learn to perceive objects as more than the way they originally understood them to be, the next step is to shift these virtualities from something merely real, into that which is possible.

Thinking

Designers are inherently forward thinking, because designing something that already exists is just history with extra steps. To think forward, or to think like a designer, requires taking a perceived reality and turning it into a possibility. Until this point in the pillow forts assignment, we are asking the student to only focus on what is real, so how do we get them to abstract a virtuality and generate possibilities from it? This is where the chosen learning objectives of the assignment are extremely important. The simplest form of abstraction happens when the student applies the actions (listed in figure 1 as 'elements') to the virtuality. By adding to,

subtracting from, manipulating, substituting, or otherwise combining virtualities, abstractions are generated. Could this cushion be considered a rectilinear volume? Possibly. Is this chair a planar construction? Possibly. Can I stack the two them together to make something different? Probably. That is where play becomes involved. Possibilities are still ideal; it is in playing with what is possible that students can actualize them into what will probably work.

Playing

A designer who has forgotten how to play is a designer who has forgotten how to design. Play allows designers to rapidly actualize their ideas into probabilities. When a student is building a pillow fort, they are actually playing a kind of game. Legendary game designer Sid Meyer believes that games must have interesting choices, ones that are situational with trade-offs (Alexander 2012). It is the rules of a game that make these choices interesting and Ryan et al. (2012)suggest that "Deep conceptual learning occurs when ideas are situated within a concrete task and driven by personal goals" (p6). For the pillow fort assignment, we gave students a game with concrete tasks (in a concrete space), but what are the students' personal goals? The play that students engage in while building a pillow fort is the type of play characterized by Brian Sutton-Smith as both animal progress skill training and flexibility (Sutton-Smith 1997, 18–34). The robust ambiguity intrinsic to play leaves room for ideas to be removed from instinct and be opened to thought. In psychiatry, particularly acceptance and commitment therapy (ACT), this process is known as "defusion" (Gustafson 2019, 7). In games, it is known as emergent gameplay. Pillow forts is, strictly speaking, not a game, but it does have a simple goal and rules (the learning objectives, the documentation requirements, size, etc.) that make room for students to create their own interesting choices. Emergence exists best in spaces where there are rules, but the rules may be bent creatively for the needs of individual players. In the design of a pillow fort, emergence happens as students find new roles for things that have another intended purpose originally. While the assignment may have stated goals, the interesting choices and personal goals will emerge as the student creates new probabilities from the possibilities they thought of. And while Ryan et al. (2012, 4) are correct in that learning, done correctly, is inherently fun, it truly becomes play as students progress across

abstraction; testing their probabilities through making and experiencing how situations and trade-offs make designing full of interesting choices.

Making

Depending on the available materials and desired probabilities, bringing a probability into the concrete, material world can be the greatest challenge of all. Some students may decide to take the path of least resistance and simply put a bowl in the middle of the fort and call it a concave or convex, but others may use rope, lights, and a tea kettle to represent something more. The material sometimes does not want to cooperate, and no amount of duct tape will make that probability concrete. This process of concretization, failure, and testing is what Pallasmaa refers to as "creative fusion" (Pallasmaa 2009, 207). This is synonymous with the ACT concept of "fusing" an idea (Gustafson 2019, 36) in that it deals with the mental concretization of a generated probability. Ingold describes how the flow of consciousness moves in parallel to the flow of material, and that stoppages in those flows, the image (virtual) and the object (concrete), are inextricably linked through our perspective. This mediates our growth within the streams of both consciousness and materiality through the constant interplay of observation and making (Ingold 2013, 20). It is through making that the ontoepistemological methodology loop is formalized, bringing ideas to the concrete state, making it easier to begin from observation again and start the process over.

Pillow Forts as a Reflexive Practice

Kolb mentions that for experiential learning to work, students "must be able to involve themselves fully, openly and without bias" (Kolb 1981, 235). Since bias is inevitable, the only thing we can do as students and designers is see and understand biases with reflexivity. Personal reflexivity is an active and ongoing process; more akin to a methodology than a method. The humble pillow fort assignment is not a shortcut to a reflexive designer, but it is an assemblage of one's material existence. People see the things in their living environments almost every day, but how much do we consider them? We like to use the example that humans can always see their nose, but our brains omit that information because it is always

there. Omission is important in design. The things we choose to omit from a design are as important as the things we choose to show.

Living environments are typically very private spaces. Requiring students to present it to a group of peers gives them an opportunity actively decide what to present about themselves. People are accustomed to doing this regularly through our choices in clothing or hair, but it's unlikely that someone decided where to live based on what other people might think. Omission of this information is a default: most people don't know anything about other people's living situations, and so there is often no need to curate it to the degree that people curate with their clothes or cars. When required to show this space, and the objects in it, what do we choose to show? Not every student will be willing to present their bedroom to a class, so they will set up their pillow fort in a secondary space or edit things out in photos.

Conclusion

The future of pillow forts is uncertain because they are temporary. Pillow forts are meant to be put together and taken a part. Yet the pillow fort assignment is as unlimited as the fort itself. It could be used to teach almost anything: colour theory, drawing, fabric draping, design processes, photography, advertising, design for disability, human centred designing, and even rich description. With the right criteria at the outset, the possibilities of what the pillow fort assignment can teach are endless. Even with a goal as simple as basic three-dimensional design principles, students will learn how to observe, analyse, inventory, visualize, play, and make. While targeted at the introductory level, the reflexive nature of the pillow forts process could be useful in a variety of fields at all levels.

Furthermore, although the ontoepistemological methodology presented is to aid in describing the pillow fort assignment, it can be used to evaluate personal design processes and other design assignments. This kind of descriptive methodology, like the pillow fort assignment, is not meant to be a conclusion, it's meant to open up the way that we think about design and design education. With the emphasis that design thinking methodologies place on designing for others, it is significant to aid designers in becoming aware of their own role in the design

process. It's interesting that this can be accomplished through an alternative methodology and by something as simple as building a pillow fort.

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Before You Go: Ambiguous Play as a Reflexive Catalyst

Abstract

Everyone is getting on starships bound for a distant planet and have been asked to each bring ten objects they might need. Upon arrival at the spaceport, you and the other crew members realize there might not be enough room for everything. Working with the other crew, you need to make decisions about which objects best fill your basic needs and which things you can leave behind before you go. *Before You Go* is a proposed educational tabletop game designed to help players sort priorities, make decisions, and act on choices related to their emotional, physical, and intellectual needs to further their understanding of reflexivity and biases. The aim of this paper is to present a ruleset, explore the theory and methodology with which this game was devised, and discuss the early development of reflexive games related to applied reflexivity. In the ruleset proposed in this paper, players are presented with objects they may have biases or attachments toward, and through the course of the game they will get the chance to assess relationships, tell stories, and make interesting choices about the objects they choose to bring with them or leave behind. In the early stage of designing this game, I evaluated my personal experiences with the game, both from the perspective of the designer and as a player. By creating an environment that players can safely explore their relationships with more neutral objects, they naturally follow this by making similar assessments with their own objects, which supports the beginning of an active reflexive process.

Keywords: Attachments, Biases, Design, Educational Game, Game Design, Human Needs, Methodology, Objects, Rhetorics of Play

Introduction

Before You Go is a proposed educational "serious" (Graesser et al. 2009, 83) tabletop game designed to help players sort priorities, make decisions, and act on choices related to

their emotional, physical, and intellectual needs[1] to further their understanding of reflexivity and biases[2]. The aim of this paper is to present a ruleset, explore the theory and methodology with which this game was devised, and discuss the early stages development of reflexive games related to an active reflexive process. The first section describes the proposed rules of the game and how those rules provide opportunities to be reflexive. The second section describes the learning objective of *Before You Go*, and argues the necessity of play in creating emergent, ambiguous spaces. The third section provides a deeper look into the methodology that creates ambiguous play space, ponders the possibilities that game design can bring to reflexive practice. In the early ruleset of *Before You Go* proposed in this paper, players are presented with tiles that have various things[3] on them. The goal is to have players play with representations of objects that they may have biases or attachments toward. Through the course of the game, players are given the chance to assess relationships, tell stories, and make interesting choices about the objects they choose to bring with them or leave behind. By first creating an environment that players can safely explore their relationships with more neutral objects[4], they

[1] Strickfaden, whom I cite frequently throughout this paper, has worked on considering needs, wants, desires and expectations for some time, and many works that support these categories (Tullio-Pow and Strickfaden 2022; Thomas, McDonagh, and Strickfaden 2012).

[2] Karen Schrier describes a bias as an "inclination or preference either for or against an individual or group that interferes with impartial judgement" based on "gender, race, ethnicity, perceived social class, nationality, and special education needs" (2018, 54), which is more in line with Coburn and Gormally's description of positionality (2017, 119). Schrier's definition shows that biases are not inherently bad as they can be for or against someone, but it also makes biases a seem like matter between humans exclusively, which leaves almost no room for the role material culture plays in framing our world (Miller 2010, 50). Symborski et al. use the definition of "human tendencies to commit systematic errors in thinking that lead to irrational judgements" (2017, 252). This definition is more in line with the statistics understanding of bias. It makes no mention of the target of biases, which leaves room for anything to be subject to or a source of bias. However, Symborski et al.'s defintion also describes biases as errors, which connotes they act opposite the bias holder's intention, which is not necessarily true. Biases are not inherently good or bad; they simply are/exist.

[3] The term object is used loosely, because the cards include a wide variety of 'things' that are usually considered objects, like phones or trinkets, but it also include things that are not generally thought of as objects, like people and pets. For simplicity, these are all discussed under the umbrella of things, stuff, or objects.

[4] The objects from a pre-made tile set are considered 'more neutral' as compared with player-made tiles with their own objects. Both pre-made and player-made tiles can invoke strong attachments and biases.

may begin to make similar assessments with their own objects, which supports the beginning of an active reflexive process.

In the early stages of designing a game, I evaluated only my personal experiences with the game, both from the perspective of the designer and as a player. The key reflexive components of *Before You Go* are currently only proposed, and the interactions discussed in this are the desired effects but have not been measured beyond my personal understanding. While informal playtesting[5] (Symborski et al. 2017, 259) of *Before You Go* has been successful in terms of rules and playability, it still requires some tweaks to reach its potential as a reflexive game. As such, I decided to make these initial observations about my own experience with the creation and playtesting of this game, and to not ask for participation from others or conduct formal playtests. Questions to my supervisor, my partner, to colleagues, and friends were in an editorial capacity (reading the rulebook, asking for clarification on the rules, etc.) regarding the mechanics of the game. The more reflexive parts of the game, such as volatile, thought-provoking, or potentially triggering objects, were kept out of the game initially, and are added in as part of a future study on the efficacy of the reflexive parts of the game. The benefit of delaying these formal tests is that reflexivity can be a challenging process for some people, and I did not want to inadvertently provoke any negative reactions. The trade off here is that one of the key components of using games to teach, the fun factor, also remains largely untested with a broader audience. Ultimately, Symborski at al. recommend that when making a theory-based game designed to explore biases, it is important to ensure that it meets the 'program goals' before moving on to the iterative evaluation (2017, 258).

Before You Go engages players in play on multiple levels. Based on Sutton-Smith's nine forms of play and seven rhetorics of play (1997)[6], *Before You Go* activates most of them to a

[5] The approach here is meant to work similarly to the theory-driven/ iterative evaluation approach to "serious game design" (Symborski et al. (2017) in the creation of digital games. Their method involves extensive playtesting with internal and external testing spread out across multiple cycles. While ideally a similar approach would be used for *Before You Go*, limitations of time and team size mean that only the theory-driven and initial "game refinement" (ibid, 257) stages were completed. Future playtesting will be engaged using an iterative cycle-testing method similar to Symborski at al. (2017).
[6] The nine forms of play defined by Sutton-Smith are mind/subjective, solitary, playful, various audience, performance, celebrations/festivals, contests, and risky/deep play (1997, 4–5). Sutton-Smith also places almost all games into the broad category of "contests" (ibid., 5), but later admits

greater or lesser extent, as Sutton-smith argues that most play does[7]. Sutton-Smith describes these rhetorics as "persuasive discourse" (ibid., 8) which influences the player and "the way play is placed in context within a broader value system" (ibid., 8). He also distinguishes between the ideological, scientific or scholarly, disciplinary, and personal rhetorics (ibid., 8), a distinction that is important to reflexivity as well because it aligns with Wilkinson's characterization of the "personal", "functional", and "disciplinary" forms of reflexivity (Wilkinson 1988). *Before You Go* engages mainly in three rhetorics: progress, identity, and self. The rhetorics if progress are about "play as adaptation" (Sutton-Smith 1997, 219). Identity is about "play as social construct" (ibid., 220). Self is about "play as peak experience or microperformance" (ibid., 220).

While tabletop, board, and card games are forms of contest, many modern tabletop games have moved away from competitive goals that pit players against each other, and instead many modern tabletop games are choosing to pit players against the game itself. Competitive goals are typically firmly within the rhetoric of power, but by making the goals of a game cooperative, the game becomes an example of rhetorics of identity. This ambiguity of progress, identity, and self are the perfect combination to create moments of reflexivity over the course of a game.

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that games are not neatly divided as a single rhetoric, but instead are categorized based on their function, players, and other factors (ibid., 215). The seven rhetorics, also defined by Sutton-Smith are progress, fate, power, identity, imaginary, self, and frivolity (ibid., 9-11).

[7] Across *The Ambiguity of Play* (1997), Sutton-Smith frequently discusses overlaps and similarities between the seven rhetorics, and by the end, has largely connected each rhetoric to all the others, if only by way of frivolity.

Method and Rules

This section describes the general flow of the *Before You Go* game, some decisions behind key rules, and how these interact with reflexivity in a final version of this game. *Before You Go* is a lightweight[8] cooperative tile placement tabletop game for three or more people, likely working best with larger groups to really capitalize on the chaotic feeling of having to pack objects for going away with a group of people. Games with fewer players may be possible with the tile set but may require special rules to adjust for the missing volume of tiles and interpersonal interactions. It is not the simplest game to setup and play as it needs some time and explanation to get started. The game has three main phases:

(1) the ship boarding phase, which includes setup, selection, and prioritization of the tiles;
(2) the packing phase, where players play the game by taking turns playing tiles to the play area; and
(3) the launch phase where players resolve the tiles in the play area against their list and decide if they collectively won or not.

It is common in the board game industry today to have multiple versions of a game, including a print-and-play (often written as PNP) version that is more accessible because these allow players to print, cut out, and get started with a game anywhere that has the internet and a printer (Junczyc 2023). While having a version of *Before You* Go with wooden rate tiles and other material upgrades may benefit the materiality and playability of the game, print-and-play ended up being the best decision for ease of editing as well at the affordability and accessibility for future blind playtesting. Figure 1 is a flat version of the print-and-play rulebook.

[8] The weight of a boardgame is a measurement of subjective difficulty, often judged by the complexity of the rules, and the mental exertion while playing, and how challenging it is to play well ("Understanding Board Game Weights" 2022). Observationally, 'light' games of have few rules and fast start times, whereas 'heavy' games prioritize complex interactions over ease of play ("Light vs. Heavy Games" 2006). *Before You Go* can be categorized as a light to middleweight game because the rules are simple and the core gameplay loop has few choices of actions for each player to take their turn, but the setup can be daunting with new players and the reflexive decisions may prove mentally taxing.

Before You Go...

Pocket Rulebook 1

Setup

Elect the first captain. The first captain is the person who most recently took a one-way trip. (e.g. switched apartments, got a new house, moved to a new country). This may also be done by vote, or randomly. All other players will start the game as a crew member.

- Each player takes 10 object tiles. (For the advanced version of the game, players may make their own tiles with objects from their lives)
- Each player will write down the information from their tiles on their customs form. Think about the object on the tile meet these needs:
  - ▼ Emotional - Sources of joy, fear, or other strong feelings
  - ● Intellectual - Stimulation for the mind
  - ■ Physical - Comforts for the senses and body
- Players will then give each object a numeric value, with 10 being the most valuable, and 1 being the least. You can only use each number once.
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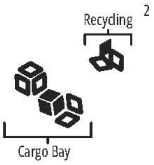
Play Area

2

Each player will keep their customs form and their hand of tiles with/in front of them. The tiles are played to the center of the table, known as the "cargo bay". Discarded object tiles are placed in a loose pile to one side, called the "recycling"



Gameplay

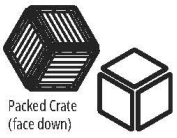
Cover your customs forms and start the game. The captain will play the first tile in the middle of the play area, called the "cargo bay", then choose the direction of play

Without revealing what need a tile fills, or other information form their customs card, crew members will take one of 3 actions on their turn:

- Load - Place a tile from their hand face-up in the cargo bay
- Upcycle - swap 1 tile from their hand for 3 in the recycling
- Stow - Ask the captain to pack a crate

Tile Placement

3



Tile placement is a very important in Before You Go. Tiles should be played in a way that they can form crates, which are three tiles of the same need arranged so they all touch on two sides, but can be played in any way as long a one side touches fully. Tiles must be played touching another tile already in the cargo bay. Tiles can't be moved by the captain if it would split the cargo.

Upcyling

On their turn, a crew member may take any 3 tiles out of the recyling, even if they previously belonged to abother player. They must then put 1 tile from their hand into the recycling. It cannot be one of the three tiles they just removed.

Packing a Crate

4

On their turn, a crew member may select three adjacent tiles that they suspect fill matching needs (All 3 E▼,I●, or P■). The current captain then guesses what need they fill. The players who have those cards on their customs form will only say if their card matches the captain's guess or not.

Matching Tiles (successfully packed crate)

Flip the tiles over and place a marker on them that matches the needs in the crate. The captaincy is then passed to the player who asked for the crate to be packed, and the previous captain takes a "coffee break" token for their efforts. They now become a regular crew member. The new captain chooses the direction of play

Not Matching Tiles (unsuccessful)

The tiles are removed from the cargo bay and go to the recycling. The captaincy is still transferred, but no coffee break is awarded to the outgoing captain. If this "breaks" the cargo bay into two piles, the two captains both play a tile to connect it.

Captain's Actions

5

Captain allows other players to pack first, so they cannot play their own tiles to the cargo bay. Captains will take one of 4 actions on their turn:

- Sort - Move up to 2 tiles in the cargo bay
- Delegate - Give up up 2 tiles from their hand to other players
- Supervise - The captain skips their turn or reverses direction of play
- Launch - Launch the ship, ending the game.

Moving Tiles

To keep things neat, especially in games with lots of players, the captain should be the only one handling tiles once they have been played to the cargo bay. While the captain may simply straiten, push together, or tidy up the play area at any time, the tiles must remain in the same basic configuration. On their turn, the captain may move up to 2 tiles. Tiles must still follow basic placement rules.

Coffee Breaks

6

Coffee breaks are a special action token that can be played at any time. By playing a coffee break, the player may:

- Sit down with a crew member - May ask for information on a tile that is in the cargo bay. They may ask what need it fills, but the answer should be in a story about the object on the tile. The player who player the coffee break may then move the tile to anywhere in the cargo area, and put a corresponding needs token on the tile. Player may also use this on themselves, telling a story about their own tile and revealing what need it fulfills. Tiles with tokens on them may not be moved, even by the captain. only packed
- Quiet Reflection - Player may swap the value of any two objects on their customs form (e.g. the object that was a 10 and the object that was a 4 swap values, becoming a the new 4 an 10 respectively)
- Double time - The player may take their turn immediately, even in the middle of of another player's turn. Play will resume in the same direction and from the player whose turn it was before the coffee break, as if they were never interrupted.

Coffee breaks tokens can be given away or traded.

Launching the Ship

7

Once the captain decides to launch the game is over. The captain may pack one final crate of any 2 face-up tiles in the cargo bay, with 1 tile from their hand. The needs in this crate do not have to match. Have players remove all tiles that are not properly packed from the cargo bay and move them to the recycling area.

Scoring

Before you go is a cooperative game, so the whole table wins or loses together. The player with the highest score gets to call themselves the first mate (if the launch captain has the highest score, they are their own first mate). First, check with each player that there base needs have been packed.

Players must have packed one of each type (E▼,I●, and P■).

Scoring (continued)

8

If every player has their basic needs met, then the ship launches, it's a small victory, but you aren't in the clear yet. Players now review their customs form and tally their score.

- Declared objects that got packed score their assigned value (+1x)
- Undeclared objects that got recycled score their value (+1x)
- Declared objects that got recycled count negative double their value (-2x)
- Undeclared objects that got packed count negative double their value (-2x)
- Any cards from another player still in your hand count negative their value for you, and for the player they belong to (-1x each)

Launch captain will total all points together and divide by the number of players.

Victory Types

All players with individual scores above 0	Average score above 0	Average score is 0	Average score below 0
You launch with a happy crew. This is a	Some people may not like it, but you will	You made it off the ground. A win... but	Catastrophic Failure. Your ship crashes.

Figure 1: The print-and-play rulebook

Phase 1: Boarding

The boarding phase of *Before You Go* comprises the setup of the game, including drawing starting tiles, filling out an object inventory (thematically referred to as a 'cargo declaration), deciding which personal basic need each object in their inventory fulfills, and assigning a numeric value to each object according to how well the objects are perceived to meet the needs of player. Each part of phase 1 has small interactive components designed to prepare players for the reflexive interactions they are about to have, as opposed to simply pulling the game out, setting it up, and starting.

The game starts by electing a captain, which is encouraged to be the player that most recently took a one-way trip (e.g., switched apartments, fled a country, etc.). This does two things: it is an homage exercises like the *One-Way Bridge*[9] (Strickfaden, 2023), and it starts players talking about personal experiences right away. Players can then draw ten tiles from the communal tile set or make their own. The tiles have objects on them that players may or may not have emotional connections to, with some being more 'loaded' than others. Examples of object on the tiles range from the possibly confusing "cribbage board", to the likely maddening "brand new phone with a cracked screen" to the potentially heartbreaking "scarf knitted for, but never given to, a loved one". These objects are inspired by the *Taste* exercise (Strickfaden & Stielow, 2023; see Appendix C), and how even deceptively simple objects can be polarizing to different people. The objects were selected based on whether or not they could fulfill people's basic needs in at least three different ways.

[9] *One-Way Bridge* is a reflexivity exercise made available by Megan Strickfaden through personal correspondence, August 15, 2023. *One-Way Bridge* was created in 2002 and used in various courses over time including in HECOL 150 and 250 in the Department of Human Ecology at the University of Alberta since 2007. It has also been used by Strickfaden in various workshops at universities and with design professionals over the years. The *One-Way Bridge* was also presented as a conference presentation in 2014 at Design Principles and Practices (Vancouver BC) in a paper titled: Unpacking Students' BS (belief system) towards designing for the other authored by Megan Strickfaden, Joyce Thomas, and Deana McDonagh.

In *Before You Go*, players may choose to mentally sort their tiles first, but it is recommended that they start by writing all ten objects down on their cargo declaration form so they have them all in one place before moving to the next step. The customs form is a tool that, at its core, is inspired from and is a condensed form of the *One-Way Bridge* exercise, and adds object recognition, sorting, and inventory. Producing an inventory in this way ensures that each object is represented and is a way of 'handling' them, as a person does with clothing in wardrobe interviews (Woodward 2016). Once on the cargo form, the player needs to think about how each object fits in to one of three need categories:

- Emotional – Emotional needs can be sources of joy, fear, or other strong emotions.
- Intellectual – Intellectual needs can be sources of interest, curiosity, or other stimulation of the mind.
- Physical – Physical needs can be sources of comfort for the senses and body.

These three categories are informed by Prown's object analysis method (1982) and Strickfaden's *One-Way Bridge*[10] (Strickfaden, 2023), both of which are expanded upon in the learning outcomes section of this paper. The key to the boarding phase is having players decide which of the objects and needs are the most important to them. Players must assign each object with a numerical value from 1-10 (10 being the highest). Then they must decide which objects are essential to bring, and 'declare' them on the inventory form. Beyond a simple metric for score calculation, this number is meant to be an indication of the player's personal assessment of the value of the object on their list, and by extension, getting at what some of each players personal values are. The expression of values are a core part of both ACT (Hayes and Strosahl 2004, 45) see Appendix B) and how Sutton-Smith's rhetorics connect to "underlying ideology" (1997, 8). In this early phase, players are mainly confronted with their own feelings and biases toward their objects, and so their values will only affect the way they rate them. The reflexive interactions in

[10] Strickfaden uses the physical, intellectual, and emotional, as shown in the *Boarding* phase of *Before You Go*. Additionally, Strickfaden's *One-Way Bridge* exercise includes a spiritual category, but only has three rings on a Venn diagram with spiritual being connected with emotional. The Venn diagram supports learners to put objects into more than one category and to recognize that a single object can fulfill more than one need. I considered having multi-need objects in *Before You Go*, but I have yet to find a way to make that work without completely breaking the balance of the game.

Before You Go rely on players showing personal restraint and follow the communication limits ("Communication Limits" n.d.) of not sharing the information on their object inventory without being asked to do so by an in-game rule (e.g., the captain asks for a crate back, they are on a *coffee break*). This secrecy begins when the tiles are handed out, and creates a "playful behaviour" (Sutton-Smith 1997, 4), which enhances the "rhetorics of frivolity" (ibid., 5) by having the players attempt to hide information that would be beneficial to everyone in the next phase.

Phase 2: Packing

The packing phase is the core gameplay loop[11] of *Before You Go*. In this phase, players take turns performing one of the given actions assigned as their current role in the game (captain or crew). Outside of special actions on 'coffee breaks', such as the opportunity for a player to invent a story for one of their objects, the main reflexive interactions don't come from individual actions, but rather the sum of the group actions. As players place tiles into the cargo area, they are forced to think of the objects that they will play side-by-side. Because of the communication limits, players will likely know very little about tiles played by other players, and have to make assumptions. I have deliberately used the word 'tile' instead of 'card' or other words that describe game pieces, despite the current version of the tiles being made of thin paper, to evoke the tile placement game mechanic. In board gaming, tiles are often used as more physical, spatial representations that rely in the other tiles around them, and encourage grouping or clustering ("Tile Placement" n.d.). Skjöld argues for 'clustering' as a valued method of sorting things, often by similarities that need only be perceived by the person doing the grouping (2014, 59). In *Before You Go*, the goal is to make clusters of three tiles that all fill the same need, either all physical, all emotional, or all intellectual. When a player thinks they have identified three tiles in a cluster, they ask the captain to make them into a crate, as shown in Figure 2.

[11] A gameplay loop is a common game designer term for what resembles Skinnerian "compulsion loop" or "core loop", which is best represented by more game-specific "'game cycle" proposed by Garris et al. (2002, 445). A small subset of rules or actions are repeated to drive the play and engagement.

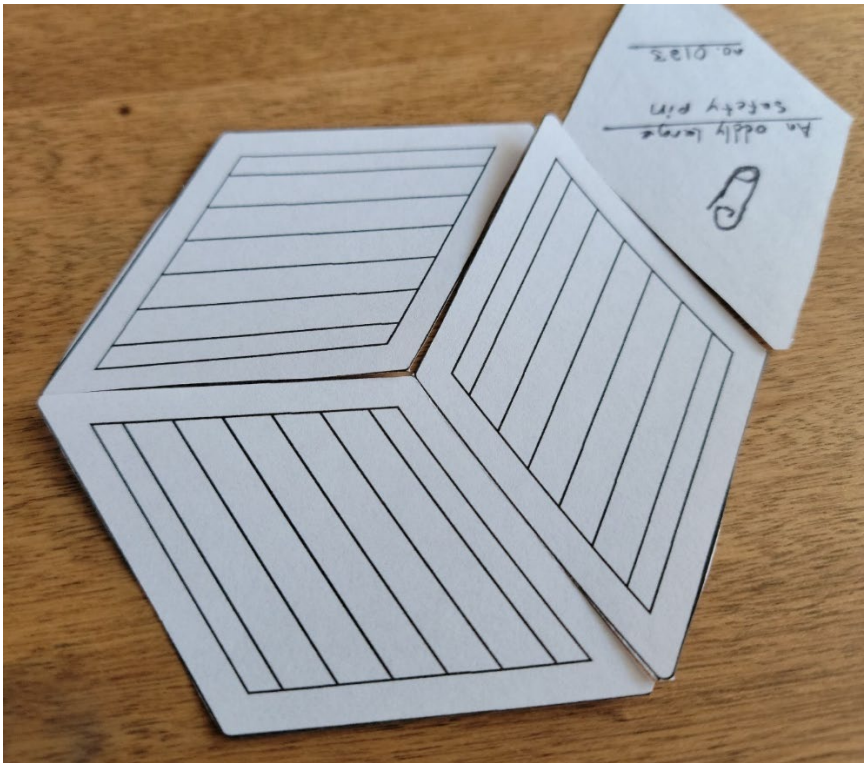


Figure 2: Before You Go game tiles (crated)

Within this phase of the *Before You Go*, players are forced to make decisions and judgements about what they know about other players. If they don't make the right assumptions, the captain will discard all three objects (to avoid showing favouritism among their crew, obviously), and the players either need to abandon the items when they launch, or waste precious turns retrieving them from the 'recycling' pile. There is one final assumption in this second phase, and it may be the biggest of all. Once the captain, through special questioning actions, or through their own assumptions, decides that everyone on the ship has the right amount of objects properly packed in crates, they remove all loose items from the play area, and launch the ship.

Phase 3: Launch

The third and final phase of *Before You Go* is the launch phase and the resolution of the game. In this phase, players examine their customs form, assigning positive points to objects that they

managed to get packed correctly, and receiving negative points for objects that they didn't pack properly. Players will tally their scores and add them together towards cooperative win conditions. The only way to win *Before You Go* is to make sure that every player has their three basic needs met; each player must have one emotional item, one physical item, and one intellectual item packed correctly in crates. If any player missed a need, the game is deemed a catastrophic loss. The game has four other endgame states: three that are victories, and one more loss condition. These are based on the score totals, and are to show the level of understanding and connection between players. If everyone had a score above zero, it is a proper victory, and everyone got most of their valued items on board and left behind the stuff they didn't want. If any players score is below 0, then it's still a win, but shows that not every player was fully engaged with and more could have been done to listen and act reflexively. If the overall score is below 0, then the mission is a failure, and nobody is happy with how things got packed. This shows a fundamental miscalculation between players, and that the players need to do more to understand the contexts that are presented to them, even when no words are spoken.

Unlike many other serious games (Rosemary Garris, Ahlers, and Driskell 2002) *Before You Go* is designed to not require a debriefing to encourage learning outcomes, ideally meaning that it doesn't need an instructor or educator to be present when playing. It is more in line with deep learning (Ryan, Costello, and Stapleton 2012; Gee 2009; Graesser et al. 2009), where learning is built into the choices made and the emotions felt over the course of the game. Despite the heavier workload in phase one, I believe that *Before You Go* avoids the dreaded "information dumps" (Ke 2016, 230) style of teaching that is easy to slide into. The previous three phases comprise the method and mechanics with which *Before You Go* is played.

Learning Outcomes

The primary learning outcomes of *Before You Go* are centred around interactions among players in-game that help individual players understand how their personal actions affected other players abilities to address their individual (and sometimes collective) needs. This

promotes practical reflexive skills like, developing empathy[12] with oneself and other people, recognizing and analysing personal connections with objects, detecting biases in context, and encouraging active reflexive practices[13]. To emphasize the need for reflexivity, *Before You Go* has one learning outcome that stands above all others: the impact that a lack of reflexivity can have on a project or practice. If players act reflexively (i.e., with empathy toward themselves and others) they will be able to launch their ship, but players who lack reflexive insight may endanger the whole crew and lose the game.

Games need to respond to the players playing them and leave room for what legendary game designer Sid Meyer calls "interesting choices" (Alexander 2012). One of the greatest difficulties I had with creating a reflexive game design was similar to that described by Ryan et al. (2012); striking a balance between the desired learning objective and creating enough interesting choices to make the game fun. I don't disagree that learning is inherently fun, but in my experience with educational games, many of them sacrifice the 'game' part to focus more on the education. Most of the games I have played feel like the aforementioned lectures, and leave little room for those all-important interesting choices that are the secret ingredient that keep games fresh, make them fun, and make them engaging. To keep *Before You Go* centred in reflexivity and stay in line with the interesting choices found in exercises like the *One-Way Bridge* (Strickfaden, 2023) and *Evolving Lines* (Ruiz and Strickfaden 2015)[14]. Providing choice in *Before You Go* was challenging even as an experienced practitioner of reflexivity and the creator of the game. As such, it took a considerable amount of time to come up with the necessary ten things to start the game. I had to imagine this problem would only get worse with more players with

[12] Empathy is understanding *what people feel and feeling it with them* (Thomas and Strickfaden 2023; Coplan and Goldie 2011), sympathy is understanding *that* other people have feelings (Thomas and Strickfaden 2023; Brown 2018), and reflexivity is understanding what *I* feel and how it *affects* myself and others.

[13] While working on this game, I also developed a way to explain the key reflexive interaction for an expanded rulebook, or player debriefing in a playtesting environment, which could potentially be applied to reflexivity as a whole. This grossly oversimplifies the nature of reflexivity, but as established earlier, this is a game, not a lecture.

[14] Strickfaden has produced numerous reflexive exercises for two decades that aim towards supporting design students to better understand themselves within the context of their design projects. For some of these projects see Strickfaden and Stielow (2023) and other works by Strickfaden (e.g., Strickfaden and Thomas, 2022).

less experience. To make the game more accessible in the first play-through, I decided to start with a tile set that would have objects already on them. This dramatically sped up the way players could get into the game and made the game easier to replay. It is also designed to equip players to assess their relationships with random things. Having players assess objects that they don't have to think up allows them to consider their biases as they exist, rather than the version that they can think up and present. The cards that people make for themselves would have a very different feel to the game, and there may even be significant overlap between what players come up with, meaning they may have to consider more collective understandings of a single object (e.g., if everyone brings a dog, do they all see dogs the same as you?). The option to have players make their own cards will likely be better in large group settings, and could possibly be a good adaptation for "disciplinary reflexivity"[15] (Wilkinson 1988, 495) or corporate environments.

The main source of interesting choices for players engaging in *Before You Go* are decisions and allocations of what personal needs each object fulfills. The use of objects seemed like an opportunity to have multiple learning objectives by including material culture object analysis in the reflexive play. The three needs categories are informed by Prown's object analysis method, but not from the three stages, rather from the three steps of the deduction stage: sensory engagement, intellectual engagement, and emotional response (Prown 1982, 9). Prown's object analysis method was modified to fit into the game environment, specifically the sensory engagement component. The overall issue was that while it would be interesting to make a game that had real objects to engage with sensorially, it certainly wouldn't be practical in this situation, and as such the tiles have visualizations of objects. By instead thinking about what role those objects might fulfill in players' lives, players might be able to imagine themselves engaging with the objects. The main source of inspiration, influence, and reflexive interactions for this game is the *One Way Bridge* exercise developed by Strickfaden. The *One-Way Bridge* exercise asks players to cross a bridge, never to return, and to bring twenty essential

[15] Referring to Wilkinson's (op. cit.) three divisions of reflexivity: *personal*, *functional*, and *disciplinary*. *Disciplinary* reflexivity, as I understand it, is separate form *personal* and *functional* reflexivity because it deals with groups, organizations, and larger structures of rules of power, whereas the other two deal largely with individuals.

items with them. After having done the *One-Way Bridge* exercise myself for the first time, I felt that it was an excellent exercise that already promoted interesting choices, but with a new, more modern theme and the introduction of a few key game mechanics, it could make the basis of a solid game that could provide a simple way to introduce and practice of material culture[16], object analysis, and reflexivity[17].

The next piece of inspiration came from one of my personal favourite games: *The Grizzled* (Riffaud, Rodriguez, and Tignous 2015). This is a cooperative game about surviving World War One in the trenches of France. After playing *The Grizzled* with a group, and losing the game, I noticed very strong reactions around the table. Players showed anger, confusion, sadness, and one player even went so far as to leave the table but immediately sat back down and demanded we play again. Having just gone through a lot of personal loss at that time, I was okay with losing a game when the cards were stacked against me, because I was had learned that some things are just outside of my control. Watching others have such varying reactions to a game that I thought was cathartic and fun made me think about the interaction between play and biases. One the objectives of *Before You Go* had to be getting those big emotional reactions to show up, but also to provide some means of having players learn something about themselves from that emotion. I reviewed what literature I could find on the use of games in the deconstruction of bias (Schrier 2018; Symborski et al. 2017; Gielen 2009) as well as the connection between play, games, learning, and practice (Parker, Thomsen, and Berry 2022; Ke 2016; Kiili 2005; Rosemary Garris, Ahlers, and Driskell 2002; Sutton-Smith 1997) to try and build subtle interactions for the players to engage in the mechanics of the game and with reflexive theory that would be needed to support emotional learning in a safe and healthy way.

As Karen Schrier notes there is limited research on how to successfully reduce biases through the use of games (2018, 57). In some cases, this may stem from a lack of consensus in

[16] Material culture can be applied broadly, especially given its interdisciplinary nature, but this mostly connects to Miller's objects as a setting (Miller 2010), and Prown's object analysis method (Prown 1982).

[17] *One-Way Bridge* already contains reflexive interactions that I was hoping to carry over, such as the connection between people and their personal objects, the sense of immediacy that comes with leaving forever, and that people choose objects for themselves and choose objects for connecting socially with others.

sources as to what a bias is, where it comes from, and how it is expressed. *Before You Go* may differ from other attempts in this field in a few ways. First, it is a physical board game, not a digital video game. This allows the game to be easily accessed and transported, and makes in a more concrete approach that could be grounded in material culture. Second, the goal of *Before You Go* is not to remove, "reduce" (Schrier 2018), or "mitigate" (Symborski et al. 2017) bias. Ultimately, one of the core goals of *Before You Go's* is to create ambiguous spaces[18] in the mind of a player in which biases can be identified and sorted through a player's priorities. I wanted to create a system for players to see their biases without feeling like the game itself is passing judgment on them. Games should not feel like a lecture on morality where the only outcome is the one the game designer wants. Furthermore, lectures lack choice, and choice is important to engaging in active reflexive processes because biases are individual. The type of reflexivity on display in *Before You Go* is not one of progress, where the player becomes progressively less biased, polishing their rough edges as they might a stone. In fact, it is the complete opposite, emphasizing the "enjoyability of the process" (Gielen 2009, 2) in the "aimlessness" (ibid.) of play. *Before You Go* is a game based in an ambiguous playful methodology which is meant to help players understand that no amount of play will remove a bias, but it can catalyse the aimless process that provides the opportunity for change.

Play, the Great Catalyst

The problems with pitching play as an aimless endeavour is that aimlessness may also seem useless, and in some ways, that is true. On the surface, play doesn't seem to conform well to specific uses or functions. Even though games encourage play, they have rules to the play, but when those rules are properly constructed, they don't limit a game to a one specific 'use'. As noted earlier, this should hold doubly true for educational games. Educational games easily fall into being more education than fun, which certainly can make them useful, but it hardly makes them playful. *Before You Go*, being a game with broad reflexive learning objectives, needed a methodology to accommodate those objectives and anchor them in learning through everyday

[18] This is connected to the emergent, ambiguous space in the centre of the applied reflexivity methodology (*Applied Reflexivity*, Figure 2).

experiences with objects, deep play, the development of empathetic relationships, and self-reflection. Building on the methodology from *Pillow Forts: Teaching Design Through Play and Making* (Stielow and Strickfaden 2023) the methodology for *Before You Go* combines Kolb's experiential learning model (Kolb 1981), experiential learning in play and game-based learning (Ryan, Costello, and Stapleton 2012; Gee 2009; Kiili 2005; Rosemary Garris, Ahlers, and Driskell 2002), with a combination of terms from Prown's object analysis (1982), Ke (2016)[19], and the Acceptance and Commitment therapy "hexaflex" (Hayes and Strosahl 2004; Hayes, Strosahl, and Wilson 1999). The result is an active reflexive process within emergent, ambiguous spaces where solutions to game problems are perceived, contextualized, reflected upon, prioritized, tested, and made concrete[20].

The ambiguous play methodology centres on the decisions that players make including what Garris et al. calls "user judgements" (2002, 445). Decisions are similar to user judgements in that they are they are personal choices. In Figure 3, there judgements are spread across 'reflection', 'priorities' and 'decisions', because judgements made in a game are much more diverse than a single word can capture. Being at the top of the hexagon, reflection is also bridges two ontological states. On the virtual side there is "reflection-on-action" (1987) which Schön characterises as a type of reflection that is used to analyse action that have already happened, which he contrasts with "reflection-in-action" (ibid.) as using reflections to influence current actions. Priorities are a means to sort the importance of the reflections-in-action.

[19] In their systematic review of learning in game play, Ke argues "players will be motivated by proximal challenges, then proceed from the ideation phase in which solutions are generated, to the experience loop in which solutions are actively tested, refined, and synthesized" (2016, 233). Ke, Kiili, Garris et al., Gee, and many of the other work cited here use digital games, many are narrative-driven, rather than more process/mechanics driven physical game proposed in *Before You Go*. Ke notes in the preceding quote, digital games synthesize the learned experience, so to accommodate for the material and object-driven gameplay of *Before You Go*, synthesizing was replaced with concretizing.

[20] These would go on to become what I call the six 'reflexive processes', a more thorough discussion on which, and their relation to reflexive practice, is covered in the *Applied Reflexivity: Making Objects as Personal Reflexivity for Practitioners* paper.

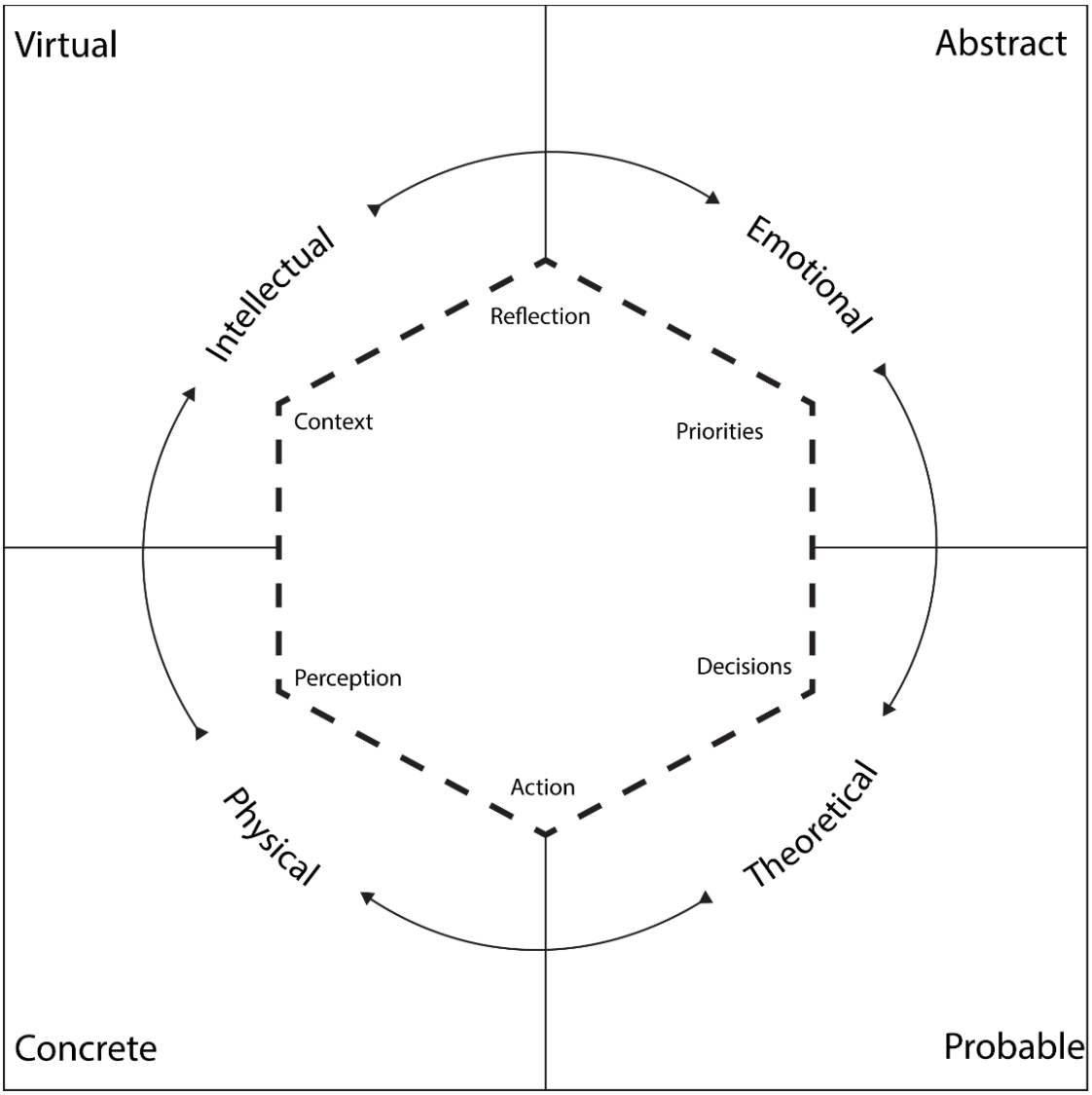


Figure 3: The ambiguous play methodology

Decisions are then used to make the final choices between the available actions. The other parts the "Input-Process-Outcome" (ibid., 455) game model proposed by Garris at al. also write include "system feedback" and "user behaviour", which are represented in the other processes in figure 3. 'Action' and "perception' are words brought in from the "committed action" in ACT (Hayes and Strosahl 2004) when combined with the 'observation' portion of Kolb's "reflective observation" (Kolb 1981), which are both used to divide "user behaviours" (Rosemary Garris, Ahlers, and Driskell 2002, 445) into more distinct behaviours. 'Context' and 'reflection' are similarly distinctions of "system feedback" (Rosemary Garris, Ahlers, and Driskell 2002, 445), with context arising from the play environment combined with and the reflection-in-action from

Schön (1987). The ambiguous play methodology used in the instructional content and game characteristics are still like how Garris et al. use them, providing the major input to the cycle, but a major difference for *Before You Go* specifically is that user judgements and user behaviours affect the input of the game cycle before it even starts. This "reflective, but also recursive" (Hibbert 2013, 805) approach is what makes this *Before You Go* a reflexive game, and not simply a learning game.

In the ambiguous play methodology, Shields' Tetrology[21] provides ontological grounding for the player's experiences. In Kolb's experiential learning model, the process normally starts at "reflective observation"[22], but that is not as effective with *Before You Go* because the objects being used are not observable in the sense that they can be engaged with the senses. By simply having this become 'perceiving', it encompasses more of the player's means to interact with objects. The other categories have similar changes.

This relationship is like a marble on a board, it will roll in whichever direction the board leans. If, for example, a player has a concrete object, perception would roll the player toward the middle, bringing them into an ambiguous space. If the marble were in the middle, any direction will roll them out to an ontological state. If the player is a marble, and the ambiguous play methodology is based in decision making, then logically the position of decisions in Figure 3 would always pull the player of any game into the ontological realm of probability. In part, this is true. Think of the dotted line in figure 3 is a semi-permeable barrier, like the ring of pegs around the centre of a crokinole board ("Crokinole" n.d.) but instead of hard pegs that let nothing pass, they are less consistent. This barrier can be difficult to cross, and it doesn't have a perfect chance of happening. From the outside of the barrier, this means the proverbial marble can simply bounce away, not making it into the ambiguous space. From the inside, this means that the marble may be stuck in ambiguity. The best way to break through a barrier is with a little momentum. I argue that the only way to build up momentum in a reflexive or ambiguous

[21] Shield's tetralogy, as it appears in two sources, is a means of ontologically understanding existence as "Concrete, Virtual, Abstract, and Probable" (Shields 2020; 2006).
[22] Kolb's model is characterized as a cycle between "Concrete Experience, Reflective Observation, Abstract Conceptualization, and Active Experimentation" (1981, 235–36).

space is by covering distance. In other words, it is easier for a player to exit the ambiguous space in a different spot than they entered.

The three types of needs from *Before You Go* are prominently displayed on figure 3 but have mysteriously been joined by a fourth category. This fourth category is not featured in the game, in part because the theoretical role for objects is taken up by the choices players make about the other objects, but also because it is an essential part of exiting the ambiguous space. Interesting choices are at the core of every fun game, and whether it bears the definition of "user judgements" (Rosemary Garris, Ahlers, and Driskell 2002, 445), "active testing" (Ke 2016, 233), or decisions (figure 2), these always have a role in the game. Effectively, that ambiguity marble can enter through any direction and bounce around to uncertain outcomes, but to gain some control over it, the player must follow the ring of arrows clockwise around the outside of the ambiguous play methodology. One of the most consistent ways is to use decisions toward a theoretical/probable understanding of the game problem (without jumping the barrier), and then rolling through actions to build up momentum to jump out in the concrete state. Risk and momentum arguably make barrier-jumping a type of deep play (Sutton-Smith 1997, 5) which is connected by Graesser et al. (2009) to deep learning via Meyer and Turner's (2006) interpretation of the three styles of deep learning theories: academic risk theory, flow theory, and goals theory (Meyer and Turner 2006). The ambiguous play methodology relies on a blend of the three theories: it uses the risk, challenge, and negative emotions from academic risk theory, the driven flow state and optimized learning speed from flow theory, and though ambiguous play is not driven by goals, it does use the obstacles, diagnostics of learning and emotion, and state of confusion ideas from of goal theory. The problem with picking only some aspects of each of the theories, is that ambiguous play then falls into the problems associated with all three theories.

This paper indirectly notes three types of things that players interact with in the game: tools, exercises, and games. As examples, the *Before You* Go cargo declaration is a tool, *One Way* Bridge is an exercise, and obviously *Before You* Go itself is a game. Tools are direct and have a purpose, but not a goal. They require prior knowledge or skills to use effectively and can help accomplish a goal that is generated by the user. Tools are something that can be used

repeatably to achieve consistent results across a variety of goals, and the same tool can be used by all skill levels, but often achieve better results at higher skill levels. Exercises differ from tools by needing less prior knowledge or skill to use, but they have their own goal. They work best when fine tuning or practicing an already acquired skill. Exercises less commonly generate new probabilities the way a tool or a game can but are better at refining or practicing. Exercises are repeatable, but often require modification to be effective for more experienced users because they have diminishing returns if the goal remains unchanged. Exercises are an example of flow theory. Games are at the other end of the scale from tools. Games generally require the least prior knowledge to get the most out of them and have the most well-defined rules, roles, or goals. Games can be experienced similarly by various levels of skill or experience because the emergent process of a game determines the effectiveness. Games are often repeatable (or replayable) and this gives different result. Games are an example of goal theory[23]. Games, also have goals and rules, and it is the combination of the two that gives ambiguity the push it needs to move toward deeper reflexivity.

Ambiguity itself is not reflexive. Reflexivity has "difference at its core" (Ahmed 2008; Lumsden, Bradford, and Goode 2019), but difference is where ambiguity thrives. The problem with ambiguity, and play by extension, is that it is very difficult to change an ambiguous thing if it cannot be defined enough for further decision-making. Ambiguity requires a structure, and in a game environment, the structure is provided by rules, and from those rules, new things emerge. Emergence (Shields and Vallee 2012, 59–60; Sandberg 2019, 7) appears in play as emergent gameplay, in which "behavior or events in a game which derive indirectly from the rules of the game system as the rules interact and create dynamics that may not have been anticipated by the game designers"(Sandberg 2019, 1). Emergent play relies on rules to provide a frame. The simpler the rules are, the easier the more room there are for ambiguous interpretation and emergent outcomes. Emergence, and by extension emergent play, is not linear, and doesn't accelerate things in a linear way. Emergence is for discovering the unknown and thrives in ambiguity. *Before You Go* has simple rules that allow players to

[23] Goal theory at its most basic, because games can also include the other two theories.

constantly redefine the relationship between objects in the game, and can introduce new objects as they emerge from making the jump out of the theoretical space.

Conclusion

Creating a game is an extremely iterative process, but so is reflexivity. What I set out to do was make a game that could spark reflexive thought, but with the rules as they are today, I doubt that is the case. More play testing, rule balances, and insight from other players will be needed to strike the right balance between creating mental space to allow for reflexive thought, and creating the interesting choices that make a game fun, challenging, and replayable. The lessons learned from making this early version *Before You Go* have been very helpful in my own process, and while this version of a reflexive game has yet to be tested with real players and personal objects, I see a strong case for the use of games and play in all stages of reflexive development. Going forward, my goal is to continue developing simple reflexive games and exercises that allow people to examine their preconceptions in safe, accessible ways in order to improve their personal practice, whether that be designing or making.

The ambiguous play methodology is another take-away from creating *Before You Go*, because it facilitated a concrete way to begin to reflect upon the value of reflexive gaming. Although the ambiguous play methodology presented is to aid in describing the how *Before You Go* interacts with reflexivity, it can possibly be used to describe other playful interactions or be the genesis of other games. This type of ambiguity, as with all play, is meant to open the player to the endless uncertain possibilities. With how powerful the rhetorical persuasion of ambiguity and play are displacing biases, there may be no limits to what can be accomplished with the frivolity of serious games.

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Applied Reflexivity: Making Objects as Personal Reflexivity for Practitioners

Abstract

Biases are like bad tattoos; they are very easy to get, but very difficult to remove. They may fade over time if people don't keep reinforcing them but will never truly disappear unless steps are taken to remove them. Applied reflexivity is a proposed personal methodology about giving form and context to biases so a reflexive practitioner can identify and measure their biases against their values. This allows practitioners to make decisions about the role of their biases in their life and work. The aim of this paper is to explore the processes and barriers to reflexivity, using examples from my own life, and to establish the basis for implementing this these processes in my design, making, teaching, and research practices. A personal applied reflexivity methodology is proposed and elaborated upon in this paper; and is explored by moving away from being language-dependent towards object-based, making processes. The applied reflexivity presented includes six reflexive processes, six reflexive barriers, and the related emergent, ambiguous space. This paper concludes by revisiting how the applied reflexivity methodology helps practitioners engage differently in their praxis by understanding it as both a source and solution for the ambiguity that creates biases and priorities.

Keywords: Ambiguous Process, Biases, Craft, Design, Embodied Knowledge, Material Culture, Positionality, Practice, Praxis

Introduction

Biases are like bad tattoos; they are very easy to get, but very difficult to remove. They may fade over time if people don't keep reinforcing them but will never truly disappear unless steps are taken to remove them. The more people try to cover them up the more embarrassing it is when someone sees them. People often think of biases as something that is permanent, an inevitable and unchangeable part of themselves, and while it is nearly impossible to completely remove all biases from oneself, they are not truly permanent. As with tattoos, it is much easier,

and much less painful, to simply understand and accept biases and then find a way to work them into something new. A good tattoo artist will take years learning how to integrate a bad tattoo into a new one and a good practitioner should be the same with reflexivity. It takes time to develop the ability to understand and shape one's own biases into something that won't cause an embarrassing level of influence on their practice. 'Applied Reflexivity' the name I have given to the methodology with which I have personally sought to discover, discuss, and defuse some of my own biases.

The aim of this paper is to explore the barriers to reflexivity, especially those imposed by language-dependent assertions, which are covered in the first section. The second section deals with reflexivity's connection to and significant overlap with Acceptance and Commitment Therapy (spelled and pronounced as the word ACT) (Hayes, Strosahl, and Wilson 1999) , additional connecting theories, and my reasons for connecting them. The final section covers the six main reflexive pathways that make up the proposed applied reflexivity methodology, the barriers that block them, and the processes a practitioner can use to open the pathways. The goal of the applied reflexivity methodology is to provide practitioners with an ambiguous, object-based, approach to integrating reflexivity into their practice so they can more effectively understand and accept personal biases as a matter of priorities, as well as provide some potential pathways to making them into something new.

Words, and the problem with them

In my practice as a designer and craftsperson, I have always preferred illustration and making when working though ideas. However, in my experience as an educator and researcher, I understand the importance of language in communicating and recording complex ideas to others. Relational Frame Theory (RFT) (Hayes, Barnes-Holmes, and Roche 2001), the basis of ACT, suggests that all words have the potential to create or supress thoughts because language and cognition are defined through associations and contexts (Hayes and Blackledge 2005). For language to work, it needs common definitions, and those definitions can build and carry their own conceptualizations. Simply put: Language has it own biases.

This problem with words becomes more obvious when using language to act reflexively in practice. Using language to understand biases is difficult because if biases could easily be put into words, they wouldn't be implicit or unconscious. Language-dependent techniques are often the proposed solution to reflexive practice[1]. I see language-dependent approaches to reflexivity as *positional* endeavours because positionality is "being aware of gender, race, educational achievements, economic position, etc." (Coburn and Gormally 2017, 119) which includes the other linguistic "labels" (Prevedini et al. 2011, A56) people place on themselves. Many exercises, such as Jacobsen and Mustafa's social identity map (2019) ask participants to categorize themselves into specific words: class, citizenship, ability, age/generation, race, sexual orientation, cis/trans, and gender. Despite the best efforts of scholars, words like these continue to be cultured words with different meanings in different cultural groups. In my experience, these words have become politically charged in recent years and carry with them heavier linguistic biases than most. Positionality is a part of reflexivity (Coburn and Gormally 2017), and while it may make people aware of their "perceived or real position in society" (ibid 120), it also places them into the type of "self-referential relations that are generally both descriptive… and evaluative" (Hayes and Strosahl 2004). The problem with words, even positional words, is that people can both describe and evaluate themselves with the same ones. Crouch and Pearce (via Giddens) suggest that "the reflexive process of understanding who we are (and we do this by looking at how we are constructed by outside influences, how we are moulded by institutional attitudes and how we then negotiate with them in order to find our own voice and values) is in effect a continual process of writing our own biography as we live it" (2012, 5). While positionality may include "the fluidity of our ever-changing social identities" (Jacobson and Mustafa 2019), once written it becomes a position: a static point within the continuing flow of lives and identities around it. After all, the linguistic root of positionality is

[1] How language is used towards reflexivity varies. Many call for written journaling or writing as the primary way to become a reflexive practitioner or researcher (Faulkner et al. 2016; Malacrida 2007; Sahakian et al. 2022; Cunliffe 2004; K. Meyer and Willis 2019; Kleinsasser 2000; Olmos-Vega et al. 2023). There are also cases of reflexive exercises that take the form of language-dependent worksheets (Jacobson and Mustafa 2019), as well as podcasting, videos, spoken language journaling, and group discussion (Olmos-Vega et al. 2023). Schwandt even explicitly mentions speech, writing, and journaling when attempting to create a standard definition of reflexivity (2007).

'posit', meaning to place[2]. To bring the continual nature back to positionality, the reflexive practitioner must also use reflection.

Reflection is "having the capacity to think about what has happened in a particular situation" (Coburn and Gormally 2017, 114). Schön distinguished two forms of reflections in practice: reflection-on-action and reflection-in-action (Schön 1987). The former is a means of reviewing events that have already happened, the latter uses past events to support current actions. Both are needed for reflexive practice (Coburn and Gormally 2017). Reflection is looking at what a person brings to the table, reflexivity is examining what brings a person to the table[3]. While it is common for reflection and reflexivity sometimes to be used interchangeably, reflexivity contains interpretations of reflections (Alvesson and Sköldberg 2018, 10) Reflexivity adds the element of interpretation, and while not necessarily providing answers, it facilitates thinking with difference at its core (Ahmed 2008; Lumsden, Bradford, and Goode 2019). The problem with words is that the linguistic root of reflexivity is "to bend back on oneself" (Finlay and Gough 2003, ix), and needs to be "reflective, but also recursive" (Hibbert 2013, 805) without falling into the cycle of creating interpretations of interpretations (Coburn and Gormally 2017; Bleakley 1999). Reflexive practice needs a logical stopping point that is not likely to be interpreted in the same context it came from.

Not all reflexive exercises that use language are subject to the same problems. The *Taste* exercise (2023, 4–11) developed by Stickfaden[4] does do not use language the same way as Jacobsen and Mustafa, so they are not subject to biases in the same way. The *Taste* exercise is entirely language based, and also asks participants to sort into word categories (e.g.,

[2] This works with the conceptualization of lines used by Ingold, wherein consciousness has a flow and "is lived on paths" (2016, 3) and any stoppage to this flow, a capturing of a moment, can be viewed as an image (2013, 20). Without the flow of material, and an object, the image remains static (ibid), a concept which is explored further in later sections of this paper.

[3] I first used this description when trying to describe my work to an Uber driver (whom I find always ask the best questions). It felt it lined up most closely with Schön's reflection-on-action (1983), but later found it could also be the logical continuation of Coburn and Gormally's (2017, 120) view of positionality as the means of getting a seat at the table in the first place

[4] Strickfaden first produced in the *Taste* exercise in 2006 for use in teaching design. The exercise was updated by Strickfaden and myself in 2016 for use in research and teaching, and published as part of a workbook in 2023 (see Appendix E). The workbook version is referenced and cited here.

associations, qualities, opinion formers, and disagreers) (ibid), but the major difference is that participants are not asked to categorise themselves. They are asked to categorize objects, some of which they may have little connection to or knowledge of. This gives participants space from their biases, which gives them a chance to observe the biases more closely without immediately running into them. This holds true with *Evolving Lines*, an exercise by Ruiz and Strickfaden (2015) which also allows people to explore a single object of their choosing. The object is often highly personal, differing from the *Taste* exercise, bringing people even closer to their biases and personal values. Both exercises have participants engage with objects in what Shields (2006) would call their 'real' form, which applies to both the words used to describe the objects, as well as the material object itself. When weighed against the positional labels given by Jacobsen and Mustafa, the *Taste* and *Evolving Lines* exercises allow for a wider range of answers because fewer labels are given in advance. The problem with words is that they can be very influential to others.

One of the goals of moving away from a language-dependent reflexivity is to make reflexivity more broadly applicable as well as making it more approachable and friendly to people who may be new to the process. To appropriately apply reflexivity to practice, I knew I needed to mitigate some of the problems with words. Ironically, the "in-action" words of Schön (1983), combined with the use of objects in the *Taste* and *Evolving Lines* exercises, gave me the idea: the problem with words can be countered with objects-in-action. More accurately, I propose the limitations of language in reflexive practice can be navigated with active, object-based processes.

ACTing Reflexive

Even though my path to design was as a practitioner and craftsperson, and my approach to design continues to be more practice-based than academic, I still suffer from inaction. Never more so than when my partner was in treatment for cancer: when my output of designed objects almost stopped altogether. After being introduced to ACT in a related crisis therapy session, I learned how to connect the care tasks that filled my days to the things they were creating in my life. The ACT acronym has three main components; *accept*, *choose*, *and take*

action (Hayes and Strosahl 2004, 32) . I learned to accept my decisions and choices were ones I made, even if they were not between good options. What few objects I was making in my life, such a food or improvised assistive devices, were still ones I *chose* to make, even if they seemed like a requirement at the time. Peeking behind the therapeutic curtain, as one is not supposed to do, I saw significant overlap between ACT principles and my understanding of reflexivity[5]. Action became one of the most important things in both my life and practice, and while they have not always been my ideal choices, the difficult ones have become easier to make the more I prioritize acting toward my "valued outcomes" (ibid, 33).

ACT seeks to build patterns of "committed action" (Hayes and Strosahl 2004, 47) which allow people to continuously move toward their valued outcomes. Though it isn't discussed as such within the ACT literature, committed action is arguably the process by which a person anchors themselves to the real, concrete world. Of the six core processes of ACT[6], action is the only word that may indicate outward-facing physical behaviours. Both ACT and RFT are based in functional contextualism (Hayes and Strosahl 2004). Contextualism[7] views "all phenomena as acts-in-context" (Fox 2006), where all actions inform the context, and the context informs all actions. This connects to reflexivity by how Wilkinson (1988) characterizes the reflexive relationship between a researcher and their research, both informing the other. The 'act' portion of acts-in-context can be linked to the 'action' part of both Schön's reflection-in-action and reflection-on-action, which combine into a sort of context-action-reflection relationship.

[5] At the time, my understanding of reflexivity was still largely framed in the exercises developed and taught by Strickfaden, including the *Taste* exercise and *Evolving Lines* mentioned earlier. It was at this point that I began to seek out alternative definitions and interpretations of reflexivity to build a wider background for it in my work.

[6] The six core processes in ACT that create psychological flexibility are (with the negative version in brackets): Acceptance (experiential avoidance), Contact with the present moment (conceptualized past and feared future), Values (Lack of values clarity), Committed Action (Inaction, impulsivity, or avoidance), Self as Context (attachment to conceptualized self), and Cognitive Defusion (Fusion) (Hayes and Strosahl 2004; Prevedini et al. 2011). These will be discussed further and more directly in the next section.

[7] Contextualism as used here refers to the overall field of study and theory that includes functional contextualism. While it plays a key role in the creation of context, contextualism cannot be used interchangeably with context, or contextualizing, which I will cover in the next section.

This is a hazardously constructed way of leading into 'praxis', which Crouch and Pearce discuss in their book *Doing Research in* Design:

> "Praxis describes the way in which thought becomes action. In the models of habitus and field and lifeworld and system that we have discussed we have seen that there is a dynamic relationship between the circumstances that surround an individual and the ways in which that individual acts. Praxis is a way of approaching the dialogue between the two from yet another perspective, from that of the individual. Briefly, praxis is the term we use to talk about the interrelationship between thinking and acting, and reflecting on the result of our actions. It should be immediately obvious that designers need to continually consider how their actions impact the social world." (Crouch and Pearce 2012, 14)

The proposed applied reflexivity is a praxis: it is "the dynamic relationship between thinking and acting, between theory and practice" (ibid.14). Crouch and Pearce discuss how the "material actions" (ibid 4) of a praxis in a "social realm" (ibid.14) create space[8], and the space in turn creates "cultural production" (ibid, 8). Framed in Wilkinson's divisions of reflexivity[9], the space of reflexive practice exists because of the interaction between the 'personal' praxis of the practitioner and the 'functional' context they generate. Because of my design practitioner and craft background, I see the knowledge called local/craft knowledge (Dormer 1994), personal/tacit knowledge (Polanyi 1966; 1958), or "knowing from within" (Ingold 2013) as a very friendly and accessible means to both accessing the personal and creating the functional. This type of knowledge can be directed toward both language and making, as seen in in the

[8] Space is discussed as Bourdieu's 'field', 'habitus' or 'lifeworld'. *op. cit.*

[9] Wilkinson establishes three main types of reflexivity, *personal*, *functional*, and *disciplinary*, with personal and functional being more closely tied together (Wilkinson 1988). While all reflexivity involves the 'self' A common thread among most works on reflexivity is that the self play an inalienable role in reflexivity, whether that be "disciplined self-reflection" (ibid) or self-critique, self-awareness, self-appraisal, or mentions of the 'researcher' in the gathered list of definitions in Olmos-Vega et al. (2023, 242). In this paper, I use 'practitioner' as opposed to 'researcher' as the 'self', which is more in line with Coburn and Gormally (2017) or Schön (1987; 1983). Reflexivity can also be practiced at a group, team, family, or at a company level. I consider group practice of reflexivity to be part of Wilkinson's "disciplinary" interactions, which will likely serve as the subject of a separate paper or a later expansion of the work here.

afterword of *The Material Culture of Basketry* (Bunn and Mitchell 2020), where Ingold proposes a term: "to 'basket' the world" (2020, 267). Basketing appears to mean actively opposing the idea that objects are subservient to subjects. In that same piece, Ingold also defends words as " whether spoken or written, issue from the body" (ibid., 268), and that "It is unfair to craft and speech to see the one only prospectively, in its incipience, and the other only retrospectively, in its outcomes" (ibid., 269). Words and craft are both a part of a unified body of knowledge, both embodied and incorporeal, explicit and tacit (ibid., 268). Making, or craft in this specific instance, is meant to work with words, but does not exist in service to them[10]. Even though they are linked, reflexivity still has a problem with words. Communicated words may issue from the body, but they still hold their virtual associations and labels, which is the part of them the proposed applied reflexivity methodology seeks to avoid.

This extended connection from act to objects via material culture is really where the proposed applied reflexivity began to take shape. The last major piece pulled from complementary work: *Pillow Forts: Teaching Design Through Play and Making* (Stielow and Strickfaden 2023), specifically the ontoepistemological methodology based on Kolb's experiential learning model (Kolb 1981), and Shields' Tetrology (Shields 2006), to anchor the applied reflexive methodology as an embodied learning experience. By thinking of reflexivity as a "multifaceted"[11] (Olmos-Vega et al. 2023, 242) space with multiple points of entry from the ontological states, like an object-based ACT hexaflex, I realized that reflexivity could follow a similar path through the states to the Pillow Forts ontoepistemological methodology, but unlike Pillow Forts, which moved between the ontological states though modified "experiential

[10] Taylor espouses the value of praxis and making in what they call "emancipatory reflection" (Taylor 2010), which is similar to reflexivity in that it is reflection with "transformative action" (Crouch and Pearce 2012, 124). Their use of both praxis and making, however, does not demonstrate the value of the act of making itself. Instead, Taylor's use of making is limited by language, discussing the transformative value of pottery to facilitate names, titles, and journaling. This speaks to a fundamental misunderstanding of craft as a discipline, and the value that material practices like pottery can bring to the practitioner's personal reflective process. Beyond this, Taylor encourages health practitioners to "throw the clay at the wall", which is an unsafe practice, as the residual silica dust from clay is known by even rookie ceramicists as being incredibly toxic. Unfortunately, this type of misunderstanding of making is all too common, as objects are often seen as "trivial" (Miller 1997, 19).

[11] As opposed to the linear progression that I was initially looking for, see introduction page 9

learning”(Kolb 1981) processes (e.g., seeing, thinking, playing, making), the applied reflexivity methodology that I propose has six pathways that reflect both the hexagonal form of the ACT hexaflex and the need to accommodate the complexity of the reflexive relationships between material, contextual, theoretical, personal, reflective, and active. Rather than staying in any one space, or trying to experience them all simultaneously (as with psychological flexibility), the goal of applied reflexivity is to create a flow between states. This was created as a preliminary conception of how a practitioner goes through the reflexive process and is shown in Figure 1.

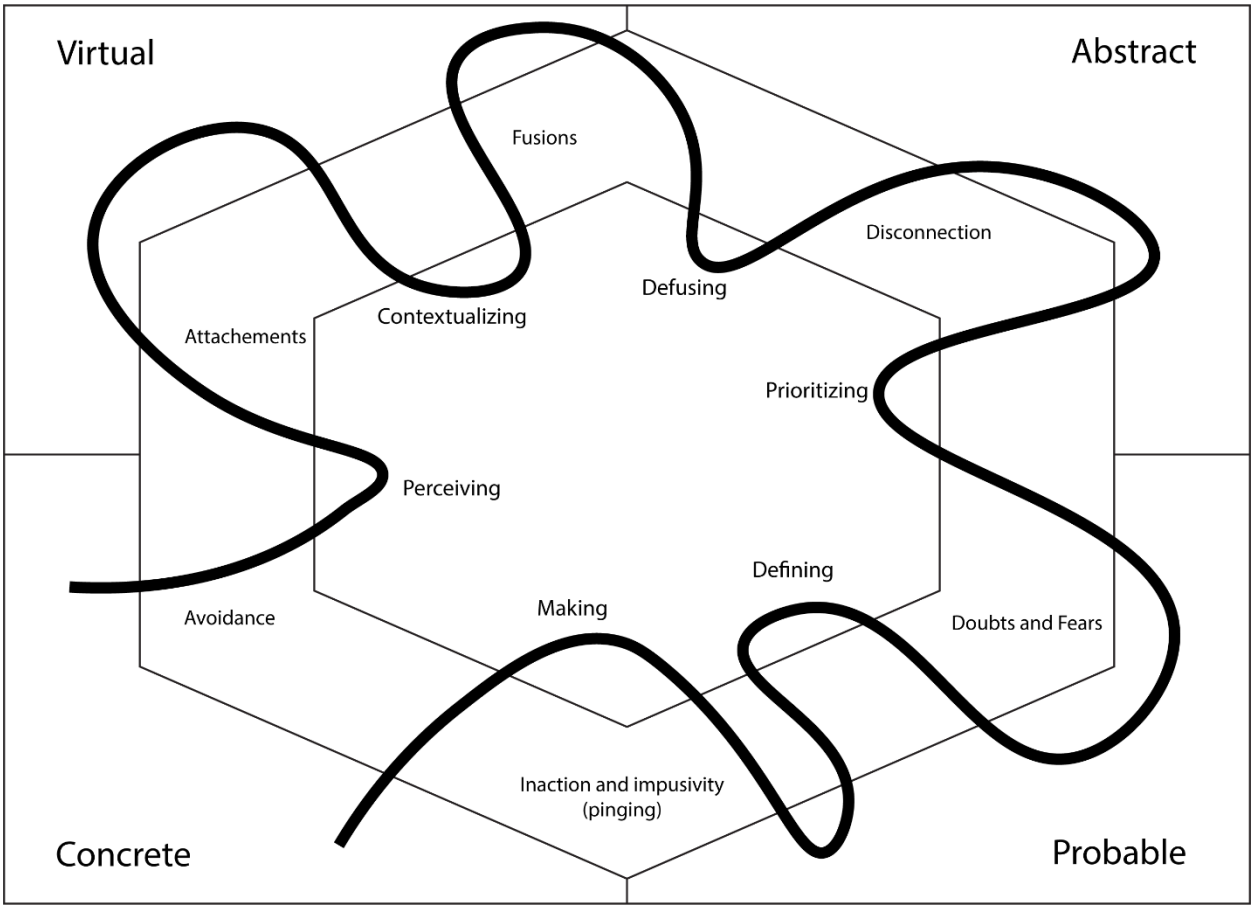

Figure 1: The flow through reflexive practice

Without getting too deep into a philosophical argument, I believe Shields' Tetrology[12] to be one of the more rounded, flexible, and accessible ways of discussing the complexities of being. The ontological states are accessible by objects from any of the four categories, allowing practitioners "to both distinguish the Virtual from – and relate it to – worlds of material existence, the mathematical worlds of probability and possible occurrences, and the abstract world of pure idealizations. These relationships are mediated by human agency, the flow of time and concurrence of place". A reflexive practitioner may start with a 'concrete' object. Through *perceiving*[13], they can experience the objects and understand them as virtualities: images, memories and idealizations of real objects. Through *contextualizing*, they can understand an object in its place in the flow of time and place, and seek to break any previous attachments to through *defusing*. The practitioner can now find new attachments for the 'abstract' thoughts and pure idealizations, centering them in their personal praxis and agency by *prioritizing* their reflections. They must then continue using their agency, *defining* the 'probable' outcomes of their reflexive practice by making decisions and choices, and then overcome inaction and concretize their choices by *making* their ideas real again. Applied reflexivity is both a methodology and a praxis; a dynamic relationship between context and individual, a flow between embodiment (perception), field/habitus (context), reflection-on-action (context/defusion), personal valued outcomes (priorities) reflection-in-action (priorities/defining), and committed material action and realized results (concretization).

[12] This is the four categories in the boxes in the corners of figure 1: concrete, virtual, abstract, and probable. I work from both the earlier condensed form of the Tetrology in *Virtualities* (Shields 2006) and the slightly expanded one in *Three Figures of the Virtual* (Shields 2020). Both provide similar definitions of the categories of seemingly commonplace words that have long and often contested histories and definitions. *Concrete* is both *real* and *actual*. *Virtual* is both *real* and *ideal*. *Abstract* is *ideal* and *possible*. *Probable* is both *actual* and *possible*. Most uses of any of these words throughout this paper will stick to these relationships.

[13] The emphasized (italicised) words used here mirror the words (pathways) in the middle of both figures 1 and 2, and use the -ing suffix to show them as active processes. Other versions of these words (e.g., perceiving, perception) are used occasionally for grammatical reasons, but are largely tied to the same pathways unless otherwise noted.

The Six Reflexive Processes and Barriers

When digging into the proposition of the applied reflexivity methodology, it is important to outline and visualize the methodology. Although I've already indicated the weaknesses of language-dependent ways of engaging in reflexivity, for the purpose of this paper (and thesis), I need to use language to describe my proposed methodology. It is important to note here that the applied reflexivity methodology is still a work in progress and may be further refined in the future (see figure 2). Figure 2 shows the applied reflexivity methodology in a configuration that builds upon what is shown in figure 1.

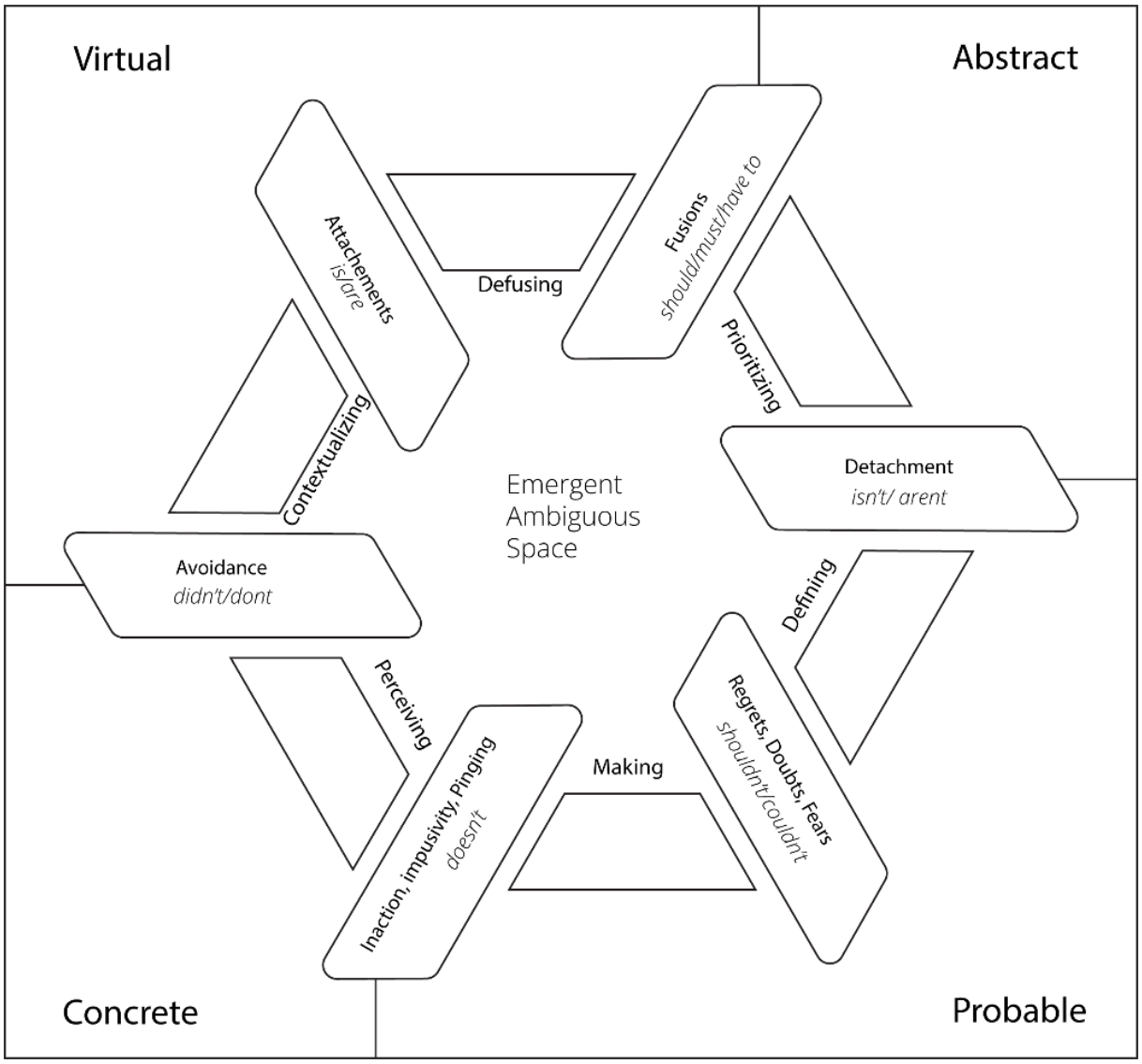

Figure 2: The applied reflexivity methodology

The applied reflexivity methodology diagram shows the applied reflexivity in a new configuration. It has a similar hexagonal format, but with minor changes to better show how the six reflexive pathways flow into the four ontological states which surround them, with more protruding reflexive barriers to illustrate how they might get in the way. At the centre is emergent ambiguous space surrounded the six main reflexive pathways, perception, context, defusion, connection, definition, and concretization[14], which fall between the ambiguous space and the barriers. It is speculated that each reflexive pathway is blocked by a specific barrier and can be opened by a corresponding reflexive process. The reflexive perception pathway is blocked by avoidance, and opened by embodiment. The reflexive context pathway is blocked by attachments, and opened by contextualizing. The reflexive defusion pathway is blocked by fusions, and opened by defusing them. Connection is blocked by detachment and opened by prioritizing. Definition is blocked by fear and opened by choices. Finally, reflexive concretization is blocked by inaction and impulsivity, which can be overcome with making.

Also visible in figure 2, each of the reflexive barriers has words associated with them (e.g., is, are, should, don't) that would seemingly contradict the object-based approach of applied reflexivity. It is important to note that language, and the biases, contexts, and references that come with it, are one of the things that applied reflexivity aims to overcome, but also how unfair it would be to separate the two completely (Ingold 2020, 268). These barrier words serve as an easy way for a practitioner to catch when they might have encountered a reflexive barrier, and potentially help them identify which one they may be up against. Think of these words as a diagnostic tool, and like all tools, they can cause more problems than they fix when used incorrectly.

[14] These are derived from, and share important wording with, the six core processes in ACT that create psychological flexibility (negative version in brackets): Acceptance (experiential avoidance), Contact with the present moment (conceptualized past and feared future), Values (Lack of values clarity), Committed Action (Inaction, impulsivity, or avoidance), Self as Context (attachment to conceptualized self), and Cognitive Defusion (Fusion) (Hayes and Strosahl 2004; Prevedini et al. 2011). This section will refer to each of these in the context of their role in applied reflexivity, including their direct influences from ACT and key differences.

Becoming a reflexive practitioner is not a matter of simply overcoming one of the barriers and then having free access to the emergent ambiguous space, or even the other processes. Even if the practitioner has successfully opened one pathway, if they are still experiencing a different barrier, their line will be blocked, and they will flow out to the nearest ontological state. Think of it like an upturned plate or shallow bowl; a nearly flat shape, but with is still noticeably higher in the middle. A droplet of water on that plate would naturally rest at the lowest points around the edge, which are the ontological states in this example. Lift the plate from one side (putting in the work to overcome a reflexive barrier) the water droplet will move toward the middle. The water will never stay in the middle, however, because as it approaches the highest point, it will usually divert and take a different path, and even with sustained effort, will eventually return to the edge of the plate. The rest of this section outlines the importance of each reflexive pathway, the specific barriers that blocks them, and how to activate them through the proposed reflexive process.

Perception

Reflexive perception is the pathway from the concrete ontological state where all real and actual objects exist (e.g., things, people, places, etc.). Similar to the ACT process of acceptance, which deals with control and experiential avoidance of the here-now[15] (Hayes and Strosahl 2004, 7–8; Prevedini et al. 2011, A56), reflexive perception is less focussed on behaviours and instead uses 'embodied experiences' (Pallasmaa 2009, chap. 5) with objects. Since "Perception fuses memory with the actual precept, and consequently, even ordinary sense perceptions are processes of comparison and evaluation" (Pallasmaa 2009, 116), the goal of reflexive perception is to uncover personal conceptualizations and memories tied to objects. As a reflexive process, embodiment seeks to discover and acknowledge the potential ways in which the practitioner's hand[16] did influence or control the creation, acquisition, or placement

[15] The term 'here-now' is drawn from Hayes and Strosahl (2004, 9), but as the authors mention, it is connected to the referential frame theory concept of the here-now frame. Applied reflexivity also works in the here-now frame, but since it is also centred in material culture and concrete objects, it also works in a thing-like frame (ibid), or arguably a thing-now frame.

[16] Referring to the broader use of 'hand' as an extension of the practitioner, especially as used by Pallasmaa in *The Thinking Hand* (2009). Objects can be made in many ways that don't use hands,

of the object. In many ways, overcoming avoidance, experiencing embodiment, and perceiving one's influence can be the most difficult pathway to open, which is one reason why it is being proposed as the 'stating point' for applied reflexivity. For me, opening the perception pathway felt like admitting a mistake or swallowing my pride; which I have since come to realize are things that many people avoid.

Avoidance

Perception is blocked by avoidance: the act of denying or distancing ourselves from our embodied experience. According to Stephen Hayes, one of the easy ways people can identify avoidance is through "are not" statements (2020), and while they can be used similarly in applied reflexivity, these words are more closely associated with a detachment from values, rather than avoidance. It is easier to spot someone avoiding reflexivity when they use the more argumentative childhood standby "nuh uh". *Didn't/don't* statements are useful in identifying avoidance in applied reflexivity because while ACT focusses more on accepting things that are currently happening without change, applied reflexivity practitioners must reflect on past feelings, choices, influences, and contexts and consider changes. These statements can range from the simple "I didn't think about that" to the much more intentionally avoidant "I don't think that I had any undue influence on the outcome of this project". Embodiment, the process used to overcome avoidance, is decidedly in the present tense. By acknowledging the choices that the practitioner made in the current material form of an object and connecting it to their current embodied understanding of themselves and their interactions with that object, they can overcome avoidance and take their first reflexive steps.

Embodying

In its most simple form, embodiment is the "sense of one's own body, which includes the feeling of being distinct from other objects/persons and the sense of what and where one's boundaries are" (Segil, Roldan, and Graczyk 2022, 1). Barriers, being an important part of

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including other extensions of the human body (e.g., feet, mouth, prosthetics, etc.) as well as through machinery or tools. Embodiment largely only applies to the human body and its extensions, especially for reflexive purposes, but the objects in the reflexive practice do not need to be made by hand.

applied reflexivity, are something that people can easily define themselves by. Boundaries are not barriers, nor are they limitations[17]. The boundaries of embodiment rely on the mind's interpretation of "continuous feedback from the tactile, proprioceptive, visual, interoceptive, and vestibular systems" (ibid., 1) as well as the understanding or control over the body that contains those systems. People can activate their perception by engaging with the concrete world and accepting sensorial input without attempting to alter what they see, feel, taste, hear, or smell. Embodiment exercises[18] are a great way for people to centre themselves in their sensorial environment. In *The Tacit Dimension* (1966) Polanyi says that "the body is involved in the perception of objects" (1966, 29), and that "we form, intellectually and practically, an interpreted universe populated by entities" (ibid., 29). This raises a few important points. First, that whenever objects are involved, the body must be as well, whether it is through the interaction with objects directly or as part of goals or tasks or what are called "taskscapes" (Ingold 1993; Kirsh 1996; Tullio-Pow 2016; Tullio-Pow and Strickfaden 2022). Second, people form interpretations of objects, and of their universe. Third, human interpretations are formed both practically (concretely), and intellectually (virtually), which aligns with Shield's description of an object (Shields 2006, 285).

Context

Reflexive context is one of the pathways from the virtual ontological space; a place of images, memories, and the embodied understandings of objects. Both pathways from the virtual deal with "the definitions and stories about one's self" (Prevedini et al. 2011, A56) Reflexive context is blocked by attachments to previous conceptualizations, which can be most easily spotted by making definitive statements about what something is or what objects are. These attachments can be overcome by understanding virtualities (Shields 2006) or virtual

[17] Boundaries, barriers, and limitations are all discussed in later sections. Boundaries in embodiment should not be confused with the "healthy boundaries' discussed later, but they can effect each other.
[18] There is a vast wealth of embodiment exercises, including some very broadly used exercises for general embodiment (e.g., yoga, body scans, tapping, etc.), but some are more closely related to human/object relationships and object analysis. The mindfulness, experiential control, and acceptance exercises in ACT (Hayes and Strosahl 2004, 32–38)may also be useful in practicing embodiment, but may require small adaptations when interacting with objects.

objects in the context they currently inhabit—by contextualizing them. ACT uses the self-as-context as a means to "undermine the definition of the self as a few and very narrowing labels" (Prevedini et al. 2011, A56) through mindfulness and contact with the here-now. Reflexive context is created by centring virtualities in their own here-now contexts, and acknowledging the labels placed on virtual objects by both the practitioner and other people. In a practical sense, this means looking at images or memories (including the embodied experiences gained through reflexive perception) of objects and not simply stopping at describing them, but examining what led to their creation, and how they exist now. For me, opening the defusion pathway felt like realizing how often I lie to myself about the things I so clearly experience or feel and scolding myself for being so foolish and gullible as to believe to believe my own lies. I have since learned that many people fabricate contexts for their own comfort and can be intensely attached to them.

Attachments

Reflexive contextualizing is blocked by being attached to previous conceptualizations. If a practitioner wants to understand something within its context, and not just their own construction of it, they cannot believe the stories they tell themselves, nor the definitions they already know. Attachments don't use current information such as embodied experiences or ongoing relationships. Attachments are preconceptualizations or "assumptions"(Wilkinson 1988, 495): generated from a previous context and held onto for simplicity or comfort. Attachments are a point on a line; a position in the flow of time, consciousness, or material[19]. Positional statements can be an example of potential attachments, because they place the practitioner or object in defined labels that may be tied to previous understandings of those labels. Though attachments can be useful, and are indeed created, in other reflexive processes (e.g., connection, definition, and making), working through attachments is necessary to step back from the "rules"(Prevedini et al. 2011, A56) that a practioner's "position" (Coburn and Gormally 2017), "relationships" (Wilkinson 1988), or "lifeworld/habitus" (Crouch and Pearce 2012, 13) may have created for themselves or virtual objects in their space. It is also important

[19] See section above, or thesis intro pages 9-11 for more on positions, points, and lines.

to separate is/are statements that rely on a previous definition or story, from is/are statements that describe the place those objects are currently in.

Contextualizing

Contextualizing is how people further grow understandings about what things are in where they are currently situated. Reflexive contextualizing relies on a practitioner taking a more objective view of definitions and stories without relying on those definitions as true. The goal is not to do away with context, but to find contexts that are not exclusive to the practitioner's assumptions about themselves or an object, but also not to seek objectivity because reflexivity is "rooted in a respect for and a valuing of subjectivity" (Olmos-Vega et al. 2023, 242), Reflexive contextualizing is about creating understandings of how definitions, stories, and objects interact with each other within the here-now frame. Two examples of potential method to contextualize objects is to look for new or unfamiliar aspects of them, or for the practitioner to pay close attention to anytime their thoughts about the object stray from the present to the past[20]. It is important for practitioners to reject that which they 'know', and make the distinction between that which they 'think' and that which they 'thought'.

Contextualizing relies heavily on the input from the embodied experiences in the perception pathway, but can be applied directly to virtual objects as well. When an object has been contextualized to the current satisfaction of the practitioner, they are left with a virtualitiy-in-context[21].These contextualized virtualities are freed from past attachments, centered in the present, but before they can become possible they must face the future.

[20] These potential methods are derived form ACT clinical interventions, the Tin Can Monster and Future-Past-Now (Hayes and Strosahl 2004, 44) interventions respectively, which are meant to help people perceive their "self-as-context" (ibid.). ACT discourages people of thinking of themselves or other people as objects. This holds mostly true in applied reflexivity as well, but because the methodology and processes are tailored to be object-oriented, and it is also not intended to be therapeutic, the bulk of ACT metaphors and interventions don't apply. With care, some may be able to be adapted, which could be featured in later expansions on applied reflexivity.

[21] Virtuality-in-context refers to the "act-in-context" (Fox 2006) root metaphor of contextualism, which could again be theoretically to the potential for a object-now or thing-now frame.

Defusion

Reflexive defusion, much like cognitive defusion in ACT, is the process of when people distance themselves from assertions of what things ought to be. Hayes and Strosahl call these assertions "fusions" (2004, 39). Language-based fusions are often about how things *should, must*, or *have to* be. Reflexive defusion is the second access point from the virtual ontological state, and like context, deals with the stories and definitions people tell for themselves. Where contextualizing virtual objects unlocks them from the past, defusion disrupts the feeling that the future of an object is already decided. For me, opening the defusion pathway felt like abandoning my goals, hopes, or dreams, especially when working on personal projects. I have since learned that many people would rather fuse themselves to labels than face abstract thought.

Fusions

Fusion or fused ideas come about when people fixate or get stuck on specific values, beliefs or ideas. Fused ideas are often expressed as "should, must, or have to" (Hayes 2020, sec. 6) statements. When I was engaged in cancer support meetings while my partner was undergoing treatment, expressing a fused idea is often referred to as 'shoulding'[22]. When shoulding is done to someone else it's called "shoulding on them" and if you do it to yourself, it is called "shoulding on yourself". This play-on-words is used to illustrate that telling people what they should be doing or feeling is tantamount to defecating on them, or on oneself (e.g., you should do yoga if you're feeling tired, you should look at the bright side of all this). It's a simple, playful, and effective way for people to remind themselves and others that they may be working with a fused idea. Shoulding from others can often be dismissed as negativity, but shoulding on yourself has a much more significant impact. It's easy for people to get caught up

[22] The term 'shoulding' is commonly attributed to psychologist Clayton Barbeau, though the exact origin is not well cited. According to Tagg (1996), Barbeau's version of shoulding was largely about the automatic thoughts people tell themselves, which can be countered by asking "why" questions, providing factual context and making choices. The colloquial version of shoulding I first encountered had expanded the meaning to include not only personal thoughts, but spoken words, and especially those spoken by other people that are used in a well-meaning, but ultimately toxic way. As I currently understand it and use it, context and choices still play a role in the remedy for shoulding.

in what they believe things should be, or must be, or have to be, but all those things *are* the biggest barriers to creating probable objects through connection to values, tastes, and priorities.

Defusing

Reflexive defusing is the process of a practitioner distancing themselves from assertions of what the future should, must, or has to be. Fusions in applied reflexivity behave very similarly to fusions in ACT, with the notable difference of reflexive fusions being focussed mainly on the future. This holds true for defusion as well. Since assertions around objects can still be language based, many defusion interventions can be used in reflexive practice as well. A personal favourite defusion technique of mine can also be found in ACT (Hayes and Strosahl 2004, 42), design (IDEO 2003), and the mouth of every toddler I've ever met: repeatedly asking 'why'.

Defusing is not for people convincing themselves to make do with less, because someone experiencing a lack of food and housing is right in thinking that they should have those things. Nor is defusing about doing away with aspirations or dreams, as I initially felt. These are examples of needs, wants, and desires, which are a good thing to have and can be of used in the establishment of values and priorities. They become fusions when they stop being wants, and start being shoulds. Expectations are fusions, especially when those expectations are in language or written form because they can leave little room for any other option but to fill the expectation, or risk disappointing whomever held that expectation. In Shields' Tetrology, transition from the virtual to the abstract is also a transition from real to possible (Shields 2006). By defusing the remaining assertions about a virtual object, it ceases to be a real object and becomes an abstract object that is open to endless possibilities.

Connection

The difficulty with entering the realm of possibility is that it, by default, has no limits to it. From a practical standpoint, an unlimited state sounds useful at first, but it also means that it has no mean to limit the scope, scale, or magnitude of an abstraction. Values, and connecting to values, are how people attach and reattach defused thoughts and concepts from the

abstract ontological state. According to Russ Harris, “values are desired qualities of physical or psychological action” (2019, 7), and ACT treats values as a compass to help create meaningful goals, despite also characterizing them as difficult to clarify (Hayes and Strosahl 2004, 11). Hayes and Strosahl also say that values should be expressed as a matter of choice (ibid., 11), but given they are impossible to evaluate (ibid., 48), I felt another mechanism was needed to connect them to abstract objects in practice. I locked onto the phrase “Identifying valued outcomes” (ibid., 11), and though of how one sorts which outcome is more valuable than another. Two common techniques that cam to mind were pros and cons lists, and coin flips. These techniques only provide arbitrary value, however, and the goal was to figure out how they were valuable to me. The list became priorities, and the coinflip became taste, both of which are used to open the Reflexive connection pathway and attach abstract concepts to personal values. When a person is suffering detachment, they often define *isn’t/aren’t* statements, preferring to keep an object abstract by discussing it in terms of what it is not. For me, opening the connection pathway was done in a time of such great stress that I felt I had no choice but to weigh my priorities, or risk losing what was most important to me. I now realize that many people around me have never been in a situation like that, have stayed detached from their values.

Detachment

When contextualizing an object, attachments to what it is can be the barrier, but once the practitioner has reached the abstract state, they encounter the opposite problem. By leaving abstract thoughts and concepts detached from values, they become like an untethered astronaut in space: if they can’t find their way back to the ship soon, they will eventually drift too far away and be unrecoverable. As with the other reflexive barriers, there is no clear indication of experiencing that barrier, but trying to frame thoughts and concepts in the negative terms, as what they are not, may be an indicator. Negative statements are like playing darts, but instead of throwing darts at the board, one sticks in the wall, a second flies out a nearby window, and the third directly goes directly down, looking for unsuspecting toes. Of course, with darts, no matter what the desired shot there is still a skill requirement to make the

shot accurately. Creating accurate priorities can be done by anyone, regardless of skill level, which makes it preferable to attempting to clarify values directly—and to darts.

Prioritizing

Prioritisation is how abstract thoughts and concepts can be connected to personal values. In a Wall Street Journal article, Vanderkam indicates that people can change the way they view tasks by not saying they don't have time for them, but instead saying something is not a priority (2012). I want to expand this beyond just time to include all resources that might limit a person from completing a task: including physical energy, mental energy, money, and any other material resources. The accessibility of, or distance from, places, goods, and services, while not a personal resource, can also affect the resources a person uses on a task. These resources do not have universal reserves and are not distributed equally. There may only be 24 hours in a day, but some people need more time for sleep, eating, or other tasks, and don't gauge or estimate time the same, so they may need to budget time differently. Money is rarely a problem for the ultrarich, but even average income people these days it can be a barrier to necessities. Everyone has daily pools of both mental and physical energy, and even a bad night's sleep can take its toll, but for people with disabilities the reservoir can run dry faster as they start the day with less in the pool or need more energy for every task. By thinking about these other resources when calculating priorities, one can create a much more personal and functional set of priorities. Ideally, prioritizing resources like this is an effective, daily way to centre most actions in a practitioner's values but will also hopefully show people that the way they sort their priorities is not a reason to lack empathy for other people with different priorities.

Making decisions in terms of priorities will not give anyone more resources, it will simply use those resources on their highest value outcomes, giving a practical approximation of personal values. When dealing with an abstract object though, an approximation may not be enough. Tastes, or the previously mentioned desires, are the applied form of priorities and biases. While priorities are a sorted list, tastes can be even more simple to understand because

things are either to a person's taste, or they are not[23]. Priorities need multiple abstract concepts held at once to compare, but taste can be assessed with only a single point of data. This is what makes tastes the applied form of priorities, but it makes them an even bigger approximation of values, which is useful in making quick choices, In general, the abstract ontological state is a difficult space to both pickup and leave an object, with taste being the best version of a start to the reflexive process with an abstract object I have been able to think of so far. Another danger of entering the abstract state is picking up abstract "hitchhikers"; detached thoughts and concepts that appear in the flow of consciousness that were abstracted[24] without going through defusion. While priorities may be the applied form of values, biases can be thought of as an unconscious priority; a way for unseen values to influence actions and thoughts that masquerades as a priority. Detecting bias imposters among the priorities can be nearly impossible, and despite it being the main goal of the reflexive game, but it is unwise to simply reject priorities because decisions and choices that go against a person's values are likely to cause guilt[25]. Some exercises may be beneficial in sorting biases from priorities, such as the *Taste* exercise or some of the interventions for seeking valued ends in ACT that involve making lists or sorting (Hayes and Strosahl 2004, 48). Whether acting on a bias or a priority, the abstract object is given a set of criteria with which to be compared, turning it into a probability. Reflexive connection can be one of the most entangled and unsatisfying reflexive pathways to open because it can also be one of the easiest places in the applied reflexivity methodology to reinforce an entrenched bias. Practitioners can ideally rely on the defusion path before it for good inputs, and rely on the definition pathway that comes after it to return any suspect priority outputs for further sorting.

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[23] This is not to say that taste is a simple binary. As in Strickfaden's Taste Exercise (2022), there are many things that affect whether something it to one's taste or not, specifically the associations one has with it, the recognized qualities, the things that form one's opinion, and things that disagree with that opinion. These are potentially easier to connect to the material world for some people than priorities are, though they may not be as closely associated to values without the sorting quality that prioritization brings.

[24] This type of abstraction refers to the processes that move between the states in Shield's Tetrology: idealization, actualization, realization, and abstraction. These processes are what moves things between the ontological states unreflexively. Because they are part of the Tetrology, they are also an underlying part of the reflexive processes, but aren't necessarily discussed as such.

[25] More information in guilt as a breach of values in intro, pages 11-12

Definition

Reflexive definition is where the “recursive” (Hibbert 2013, 805) nature really shows. It is the first pathway from the probable ontological state; a place of risks, rewards, and chances. The greatest barriers to definition are doubts and fears, which are most visible as *shouldn’t/couldn’t/mustn’t* statements. Decisions and choices, while both passing judgements, are not the same. Decisions are made with criteria, often a simple mental pros and cons list. Choices are simple and binary; yes or no (Hayes 2020). By making decisions and choices based in their priorities, a practitioner can overcome those fears and doubts and push their objects closer to becoming real and concrete. While I considered keeping the ACT term ‘commitment’, because in this step the practitioner commits to the forthcoming action of making, this part of active reflexivity sometimes encourages the practitioner to think twice. For me, opening the definition pathway feels like setting up healthy boundaries, and so I chose to think of it as ‘defining’ the direction of healthy practice. I’ve felt like an imposter my whole life, and deciding to pursue more education did nothing but inflate the doubts I had. By making conscious decisions and firm choices, and sticking with them, I have confronted the doubts enough to write this. I have since learned that many people would rather suffer guilt than face their fears.

Regrets, Doubts, Fears

Choices are often blocked by some of the most daunting and ancient of barriers: regrets, doubts, and fears. People sometimes regret the views they held before, fear who they currently are, or doubt who they may become as they question their priorities and biases. Doubt and fears can feel so monstrously large that they threaten to consume people. While the deep-rooted nature of fear can be difficult to push through it can be more useful to define healthy barriers that contain the fears, allowing the practitioner to pass without having to get rid of it altogether. Due to their size, fears can also be some of the easiest barriers to identify in reflexivity. Regrets, doubts and fears are often expressed through negative forms of words for fusions: words like *shouldn’t*, *couldn’t*, and *mustn’t*. I like to picture a black-and-white film actor with a transatlantic accent clutching their chest exclaiming “I shouldn’t, I couldn’t, I simply mustn’t!” or the fan favourite “I would never!”. These protests, hyperbolized as they may be, are a reasonable depiction of what unreflexive assertions of values look like in real language. The

character is displaying fear toward something that they believe goes against their personal values. However, in the context of such movies, this is usually followed by a short contemplation, and then the character does the thing they were indignant about in the first place. If the actor in this example were acting reflexively, they may have looked for the root of their fear, decided where that fear was in their priorities, put up a healthy boundary around the fear, and chosen to make their move.

Deciding, Choosing

Building patterns of committed action is how ACT encourages people to realize their values (Hayes and Strosahl 2004, 47) which does rely on decisions and choices to help build those patterns. Reflexive definition separates committed action into several smaller actions; decisions, choices, and concretization. Decisions and choices both need to be made before making a concrete object, and while the two are often used interchangeably in casual language, they have important differences in applied reflexivity. In applied reflexivity, decisions are defined by assessing the risks and rewards of individual priorities and creating a likely path toward material action. This can include setting up boundaries along the path to block fears from getting in the way. Once the path has been defined, the choice must be made whether to follow it or not.

The relationship between definition and prioritization is a good example of an instance where applied reflexivity is not truly cyclical. When attempting to define a path toward action, sometimes new information will make practitioners have to return to their priority list and rework it. A simple example is when I am designing a ring with a client we agreed to a size, price, and type of gemstone they want in it. When sourcing the gemstone (assessing criteria), I realize that I won't be able to get them a stone that meets all of their priorities from an ethical source. This new criteria adds more priorities that need to be sorted before a decision can be reached. The client now needs to also consider ethical sourcing, and where it sits relative to the other priorities. Are clients willing to pick a different type of gemstone to ethically source a larger and cheaper stone? These types of decisions are made everyday in material culture, in both production and consumption. In this example, the decision is which gemstone to use, and the frequent reality of decisions is that they may not meet every priority but are the most

favourable balance of the risks and rewards. Once a gemstone has been selected, then the choice is whether to buy it or not.

Choice is that simple binary at the end of a complex decision: yes or no, left or right, do or don't. I was reminded in a personal therapy session, and again by Hayes' audiobook on ACT (2020) ,that even if it is not between good options, there is always a choice to be made. If the choices go against a practitioner's values, then regardless of the reasons why the decision was reached, the choice may cause guilt. In applied reflexivity, choices are one of the crucial things to reflect upon in the perception and context pathways that help a practitioner understand their role in context. Choices are the window though which privilege and bias are most visible[26]. Once a practitioner has made their decisions, made they choices, then they need to *make* them a concrete part of the real world.

In a methodology designed around removing barriers, the question must be asked: why would anyone decide to put up barriers, even 'healthy' ones? The simple answer is that barriers need to come from somewhere. Not satisfied? There are many good reasons to make a barrier, and definition is the place to do that. The first, and arguably main, reason is about understanding that not all biases change to meet the context during reflexive practice. Sometimes the practitioner can decide that their priorities come with acceptable risks that can be mitigated going forward. These mitigations are boundaries. Another reason to make a boundary is that the fears or doubts may be too great to deal with all at once, and may need deeper thought or even therapeutic intervention. Both in reflexivity and in life, fear can't always be allowed to stop a practitioner from their practice. Sometimes risks need to be accepted for the work to continue, even if the fear is only held in check temporarily. Not all barriers are responding to risks though, because a third reason to make a barrier might be is to limit expectations. Now that the practitioner has reattached the abstraction to their priorities, it is possible that they flow back into a different reflexive barrier… attachments again[27]. Applied

[26] See thesis introduction for an exploration choice as privilege.
[27] As mentioned earlier in the "water droplet on a plate" analogy, it is possible for reflexive practices to take unexpected and even undesired turns due to its emergent, ambiguous core. If a practitioner is working through an object and meets a barrier they did not expect, they can decide whether to follow the barrier to that reflexive pathway, attempt to continue working through the main flow, or

reflexivity strikes a balance between construction and deconstruction of barriers: quarantining fears may cause avoidance, defining objects may cause fusions, and even concretization may cause detachment.

Concretization

Concretization is the pathway from the probable ontological realm where actions transform objects from possibility into reality. Reflexive concretization is blocked by inaction and impulsivity, which in applied reflexivity is the inability to act on choices. Much like how definition's barrier can be found in words like shouldn't or couldn't, inaction and impulsivity ignore established choices or values-based priorities and simply *doesn't*. In applied reflexivity, making is used to overcome inaction and impulsivity while creating a real, concrete output of the reflexive process that can be later used to start the process over. For me, opening the concretization pathway felt more like avoidance than the perception pathway did. Inaction and impulsivity run so rampant in my home that we have a dedicated term for it: pinging. Pinging is suffering from both inaction on specific tasks and impulsive action on many tasks at the same time. It is an onomatopoeia of the mental sound that a person makes as they bounce off tasks, unable to follow through on their choices, or making out-of-priority choices to avoid commitment. It has been a part of my life since I was very young, and I brought both the word and the practice with me when I met my partner. I have since learned that many people make decisions, they may even make choices, but they never actually commit to *making* anything real.

Inaction, Impulsivity

While there can be many barriers to the realization of a concrete object (time, energy, money, etc.) the greatest hinderance to concretization the lack of commitment of actions that results in inaction and impulsivity: or pinging[28]. Pinging is commonly how I attempt to clean my

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let the object rest in one of the ontological states. They will eventually need to address the new barrier to truly engage in reflexive practice, but not necessarily in the course or scope of the current project, object, field, or practice.

[28] Inaction and impulsivity together will be referred to as pinging from here forward, and will specifically mean the interaction and relationship between the two that causes an even less productive state. Uses of either inaction or impulsivity alone will still have their respective individual meanings.

house, which almost always ends up in a worse state than how it was when I started because I don't establish the priorities, define the task, and commit to it a choice. The irony of concretization is that because there are so many viable processes to concretize a possibility, it can be very easy to suffer the inaction of not choosing a process, or experience the impulsivity of choosing the first one that springs to mind. In a practical sense, this can look like choosing to write down an idea for an object instead of taking the time to draw it, or spend too much time planning and never staring, or even buying materials that are too expensive and not being able to get everything needed to make an object. Worse yet, pinging can look like all these at once. Pinging can look like procrastination, and they are similar, but procrastination often comes with the understanding that people will eventually get to the task. Pinging is a sneaky barrier that can crop up anytime, and has no intention of letting the task ever get done. I've spent enough time around craftspeople, students, educators, designers, and all manner of other practitioners to know that pinging, inaction, impulsivity, and procrastination are a much bigger barrier than most people would like to admit. The unfortunate cure for a bad case of 'don't', is to 'do'.

Making

Making, *poesis*[29], the creative act which turns possibilities into real, material, concrete objects. The culmination of the long reflexive journey that leaves the practitioner with a tangible thing. Whether it gets called local/craft knowledge (Dormer 1994), personal/tacit knowledge (Polanyi 1966; 1958), or "knowing from within" (Ingold 2013), people have a form of embodied knowledge that is available to them trough interaction with the concrete world. Makers, an exceptionally broad category that is only definable as 'people who make', can express their embodied knowledge through their hand. The goal in reflexive making is to overcome pinging, inaction, impulsivity, and procrastination to realize the practitioner's decisions and choices, defined in the probable ontological realm, into their concrete space. By doing so, they create a new object in the "flow of materials" (Ingold 2013, 21) which takes its own place and life in the material world (Ingold 2013, chap. 6), and becomes the frame by which people will form their own experiences (Miller 2010, 50). Effectively, reflexive practitioners can make objects that have

[29] Poesis as described by Aristotle, but used here to connect it to how Heidegger uses it to describe emergence and poetic dwelling (1971, 212).

their own context that will change over time, so they can later use those same objects to start the applied reflexivity process over again at a later point in time. By then, the object will have taken on new "embodied memories" (Pallasmaa 2009, 116) with potentially new associations and biases. In *The Thinking Hand*, Pallasmaa outlines 'creative fusion'[30], which they describe as an "embodied and tactile journey" that "is a search in the obscurity and darkness of uncertainty, in which subjective certainty is gradually achieved though the laborious process of the search itself" (Pallasmaa 2009, 108–9). This shows a familiar set of traits to reflexivity: embodiment, uncertainty, increasing subjectivity, process, and the search for something hidden in darkness. This doesn't mean that making is inherently reflexive, only that making is so closely tied to the maker that the resulting objects will be more likely tied to that maker's experiences, and not necessarily to the labels of the world they inhabit.

Much like the other two reflexive pathways that share an ontological state (context and defusion) definition and concretization are linked by a common base: risk. First characterized by Pye, the "workmanship of risk" (1968, 20), speaks to the variation in outcomes when making. As opposed to the "workmanship of certainty" (ibid.) where heavily planned making has very consistent results, the workman of risk has little planning and has a wider range of probable outcomes. When bridging the barrier from the probable state through making, a practitioner might think that more certainty in the outcome is always desired. There are benefits to both certainty and risk in making. In part, this is decided during reflexive definition, where the practitioner weights the risks against their priorities. The workmanship of risk is less likely to be stopped by inaction because it requires less actions to start and can result in a more emergent result. The workmanship of certainty is less likely to be blocked by impulsivity because it has a more defined connection to the practitioner's priorities. Making also carries with it other risks, often physical risks, which can lead the practitioner back into fear. While this is not strictly the kind of risk that Pye is referring to, it does connect the workmanship of risk to "risky or deep

[30] Creative fusion shares an obvious linguistic connection to the earlier discussed reflexive barrier, also called fusions, which are derived from ACT. This seems to be largely coincidental in the literature surrounding these uses, but they do still share a common idea. Both types of fusion deal with a subjectively understood certainty that, in reflexive practice, may need to be defused if they are the cause or embodiment of biases.

play" (Sutton-Smith 1997, 5), both of which generate ambiguity. Pallasmaa, speaking to the practice of architecture, associates the workmanship of risk "to the architect's own persona, values, belief, and ambitions – one's self-identity as an architect and professional" (2009, 72) which stem from "the mental uncertainty of advancing on untrodden paths" (ibid.) They later characterize uncertainty as having great value because it maintains and stimulates curiosity" (ibid., 110). Whether expressed as uncertainty or ambiguity, reflexivity relies on it to create the new paths for the practitioner to tread. While making always moves toward subjective certainties, in is in the risks people take that they will learn "the skill of cooperating with one's own work" (Pallasmaa 2009, 111).

Deep Learning Through Ambiguous Praxis

At its core, the reflexive process is an ambiguous process. In the centre of the six processes on Figure 2 is 'emergent ambiguous space'. Opposite the ontological spaces that frame the applied reflexivity model, which are the practitioner's connection to the exterior world and can be navigated unreflexively, the emergent ambiguous space is both deeply personal and deeply reflexive. Applied reflexivity does not require or have the overarching goal for people to achieve total immersions in emergent ambiguous space[31]; instead, the goal is to have practitioners flow into the emergent ambiguous space when processing a reflexive object or idea, but ultimately to flow back out to one of the surrounding ontological states. There is always movement between the ontological states (Shields 2006, 285), so even when not acting reflexively, objects and ideas can move to another state 'unreflexively'. These movements are directional and consistent on Shield's Tetrology: actualization moves toward the actual, idealization toward the ideal, abstraction toward the possible, and realization toward the real (Shields 2020, 62). If compared to Gibson's theory of visual perception (1989), in which things are either *medium*, *surface*, or *substance*, the ontological states would form the *medium*, the reflexive barriers and processes would be the *surface*, and the emergent, ambiguous space would be the *substance*. Much like substance, it is largely unseen place, and to the contrary of

[31] Contrary to the way the goal of ACT is to have people become more psychologically flexible, ideally staying in the middle space permanently.

the orderly movement between ontological states, the ambiguous space is a place where omnidirectional movement makes for rapid personal reflexivity. In the way that driving a fast car in a heavy rainstorm can cause sudden directional changes, speed in ambiguous, low visibility circumstances comes at the cost of being able to control the outcome.

In a praxis, such as reflexivity, this type of sudden ambiguous movement comes from taking risks. Pallasmaa and Pye both credit the ability to form and maintain a "mental state of uncertainty" (Pallasmaa 2009, 110) to errors, failures, inattention, or accident (Pallasmaa 2009; Pye 1968). In applied reflexivity, practitioners can access emergent ambiguous space by overcoming their reflexive barriers, and flowing through the space using the reflexive processes, but if they don't practice with intention or take a risk too great, they can be cast into centre of the void where it at its most chaotic and the outcomes are the most uncertain. Uncertain outcomes, while not predictable or consistent, may also provide the greatest change, allowing practitioners to move even the most stubborn of biases if there is less pressure to do so, and the centre of the applied reflexivity methodology is a void; a space that is not empty, not devoid, but one that lacks pressure and directional flow[32]. Whereas the exterior of the applied reflexivity methodology is ontological and social, I think of the emergent ambiguous space as being deeply personal; where all of people's values, experiences, and feelings live. Reflexivity is not a vortex: it does not forever pull inward or spiral outward. Reflexivity is an eddy: a twisting, turbulent void that forms behind a barrier. Each reflexive process sits close to the barriers in emergent ambiguous space, creating a flow[33], or an eddyline[34]. Navigating ambiguity can be challenging and must be done with a willingness and tolerance for risk. The kind of risk in making can be a source of "risky" or "deep play" (Sutton-Smith 1997, 5) that

[32] This is consistent with the a fluid dynamics understanding of a void, but in material culture, may be closer to Gibson's understanding of 'substance' (Gibson 1989)
[33] Flow in this use is connected to the way that Sutton-Smith (via Csikszentmihalyi) describes the six characteristics of a flow state, and their relation to play(Sutton-Smith 1997, 185), and the description by Graesser et al. (2009) which combines Csikszentmihalyi (1990) with Meyer and Turner(2006).
[34] I'm using eddylines here as I previously characterized them in the So Fi Zine article *On Rivers and Safety Pins* (Stielow 2020). Eddylines are lines that exist between flows and voids, in that example, I use them to illustrate the role of craftspeople in shaping tradition. Reflexivity can be thought of in a similar way; as a line between the ontological flow and the personal void that shapes the research, ideas, and world around a reflexive practitioner.

activate rhetorics of "power (unpredictable winners)" and "self (peak experience)" by "enabling quirky shifts and latent potential" (ibid., 222). This type of deep play is connected by Graesser et al. (2009) to deep learning via Meyer and Turner's (2006) interpretation of the three styles of deep learning theories: *academic risk*, *flow*, and *goals*. Ambiguous praxis is at the heart of applied reflexivity and is a mixture of all three of these theories. It has the risk, challenge, and negative emotions of *academic risk theory*, the driven flow state and optimized learning speed of *flow theory*, and though reflexivity is not driven by goals, it even the obstacles, diagnostics of learning and emotion, and state of confusion of *goal theory*[35]. Effectively, reflexive practice provides the biggest benefits of both deep learning and deep play when the practitioner allows themselves to play and take risks, but the more risks are taken, the more difficult the outcomes will be to ground in ontological reality or possibility. In a blog post Howard, dean of *IDEO U*, one of their tips for navigating ambiguity is to give it a name (n.d.). The problem with ambiguity is that it is highly reflexive, but the problem with reflexivity, is that it has a problem with words.

Conclusion

The use of reflexivity in applied and material culture fields is in its mere infancy, but I believe that the practice of reflexivity has near limitless applications. I believe the word itself, reflexivity, could become the most important word of the next decade. Like all words, however, not everyone uses them in a way that is beneficial to themselves or those around them. Stemming from my own practice, applied reflexivity is grounded in material culture as an interdisciplinary field with a focus on making instead of writing to realize ideas. Going forward, I would like to expand on the applied reflexivity methodology and test its uses in my own personal practice, but I would also like add methods, exercises, and even games to make reflexivity accessible to even the most blocked, inflexible, unambiguous people. Beyond that, I see extending it to other fields that study, use, create, or even sell objects. Biases can be embedded at a level of relationship, and even with the biggest company or my own apartment, there is always an opportunity to look for preconceptions and priorities. As a methodology that

[35] The terms describing each theory were pulled from Graesser et al.'s (2009, 90–91) description of the theories, which help keep them tied to both deep learning and deep play.

emphasises change, I have no doubt that the shape of applied reflexivity will change along with the people who practice it. Once the barriers to reflexivity start to come down, and the process gets under people's skin, applied reflexivity can start changes that continue for a lifetime if they put in the work. I don't know, maybe I'll go get a bad tattoo as well.

In sum, this paper breaks down the problem that language poses to reflexivity. By introducing material culture, action, making, and Acceptance and Commitment therapy, reflexivity appears less like a singular process or relationship, but like a praxis of embodied knowledge centred around objects. It then defines the six pathways by which a practitioner can travel with these objects, each with their respective barriers and processes. A reflexive practitioner can start with a concrete object, perceive, contextualize, defuse prioritize, define, and make that object into something concrete again, hopefully overcoming fears, labels, and unwanted biases along the way. With care and attention to the world around them, a reflexive practitioner can repeat this process anytime with any object, because all objects live in their context with them. And with a sense of play and risk, they can venture to new places that they never could have reconceptualised or described.

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Thesis Hunt Minigame: This thesis is not only a thing and a poem, but also a game. Somewhere in this thesis a line of text has been repeated twice in a row, identically, potentially letting the player’s mind skip over it completely. Hint, it’s in the first half.

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Appendices

Appendix A: Applied Human Factors and Ergonomics 2023 and its Affiliated Conferences [AHFE] Best Student Paper Award, July 20-24, 2023 San Franscisco, USA

APPLIED HUMAN FACTORS AND ERGONOMICS 2023
AND ITS AFFILIATED CONFERENCES

AHFE 2023 BEST STUDENT PAPER AWARD

Interdisciplinary Practice in Industrial Design

presented to

Malcolm Stielow
Megan Strickfaden

for the paper on

Pillow forts: Teaching design through play and making

AHFE International
Applied Human Factors and Ergonomics Conference
2023
www.ahfe.org

July 20-24, 2023
San Francisco, California, USA

Waldemar Karwowski
General Conference Chair

Appendix B: Stielow, Malcolm and Strickfaden, Megan (2021) Pillow Fort Design Brief for HECOL 250: Design Studies and Practice, University of Alberta.

Introduction

Similar to two-dimensional design, three-dimensional design aims at establishing visual harmony, order and/or excitement; however, in addition to this, three-dimensional design involves thinking more sculpturally (multiple viewpoints) rather than pictorially (one viewpoint). Three-dimensional design is typically considered to be more complicated than two-dimensional design because it deals with materiality and spatial qualities beyond basic visual perception. The elements of three-dimensional design move beyond compositional principles because they deal with conceptual, visual, relational and constructional aspects. This means that some of the perceived elements are not physical attributes, however, these are still conceptually understood.

In previous projects in this course you have reviewed the elements of design and the principles of composition (line, shape/mass, space, texture, colour, rhythm, emphasis/focal point, balance, proportion/scale, unity/variety). Where the elements of design and principles of composition work to aid in deconstructing and discussing designed things that are three-dimensional; the structure of three-dimensional visual relationships is used as a means to providing direction when designing three-dimensional things. The fundamental elements in three-dimensional design relate specifically to simple planes and lines in geometric construction.

This unit involves understanding the basics of three dimensional form and volume. The in-studio exercises and blog assignments in this unit build upon the need to analyze, deconstruct and discuss design by using a visual language such as the elements of design, the principles of composition and the elements of three-dimensional design. In this case, the guidance is by thinking about and using the structure of three-dimensional visual relationships.

The Assignment

Build the Ultimate Pillow Fort

The goal of ultimate pillow fort is to build a temporary structure out of common materials you have at home.

Your fort must be large enough for you to fit in (otherwise it's not a fort) and have an example of all 8 structures of 3D design as seen in your Three-Dimensional Form handout. You will create a photo 10-12 photo spread from photographs of these 8 structures, as well as at

least one overall shot that captures the whole fort, and at least one photo of you in the fort. Your spread will be made digitally using any layout program (Powerpoint, Photoshop, Indesign, Scribus, Canva, etc.) but should be submitted digitally as a PDF through e-class.

You will be graded on how well the fort connects with the structures, relationships, and elements described in the Three-Dimensional Design handout, as well as how well your photographs and spread present your work, the composition, and the ingenuity when building the fort. Get creative with it and have fun!

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Principles of Three-dimensional Design Wucius Wong

Appendix C: Stielow, Malcolm (2020) On Rivers and Safety Pins: Exploring Materiality Through Craft." *So Fi Zine*, 2020


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#SOFIZINE

On Rivers and Safety Pins
Exploring Materiality Through Craft

Malcolm Stielow

Abstract

On Rivers and Safety Pins is a personalized account about connecting craft to the material world that surrounds it. It focuses around a central paradox in craft needing to be both traditional and original, and how those center in the larger creative cultural meshwork. Explored within are puissance, pouvoir, springs, flow, blobs, rocket jumps, and weaving, and how all those can be one and the same thing.

Keywords: Eddy, Knot, Line, Making, Meshwork

Introduction

I recently completed an in-depth review of the definition of craft in a Canadian context. While the review succeeded in producing a definition of craft, there was a part of it that I felt was unresolved:

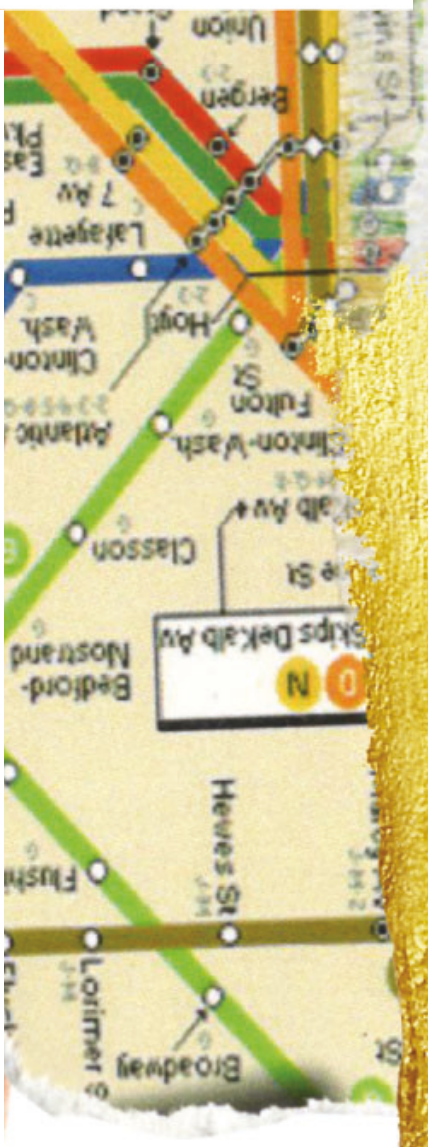
"Canadian craft is both a noun and a verb that evokes the practice and process of making objects for use, sale, or display that communicate intersectional cultural and disciplinary values of tradition, skill, and originality."

What I saw here was a paradox. An object being simultaneously traditional and original does not feel impossible, but it certainly is odd to think of the two as being capable of standing on par. As the end of my coursework in my master's loomed, I knew

that I had to dig deeper into the paradox before moving forward with the rest of my thesis. This is the product of that reflexive process into what craft is to me, what I am to craft, and what craft is to history.

The Tradition/Originality Paradox

Imagine a flowing, clear river on a sunny day, not so wide that you can't see across it, but not so narrow that you would think about swimming across it. The water flows smoothly on the surface but is turbulent underneath. I have often imagined this river myself. It looks calming and beautiful from the shore, but it has a strong undertow. Only the brave or quixotic dare to cross it. I have often used this river as an analogy for creative practice. On one side of the river, there are the general public and the novice creatives, on the other side are the professional creatives. I used the metaphorical construct of an invisible bridge to explain what living as a creative life feels like. When you're standing on the starting shore, you can see the successful creative people on the other side, and you have no understanding of how they got there. You assume there must be a bridge somewhere, but you cannot see it, so you stumble repeatedly into the river.



All along the shore there are people, just like you, stumbling into the river. Other people are watching you and are too scared to try. Most people are standing further back and commenting derisively on what a hard life being creative is because they are confident that there is no bridge.

I have used this metaphor for a few years now to describe my personal struggle with becoming a professional craftsperson. I was the person stubbornly walking into the river, my head held high with pride, thinking that one of these times I was going to make it across. I've only recently realized the inherent flaw in hoping for a bridge. If a craft object needs to be both original and traditional, then craft is a materialized paradox. The problem is not the size of the river, nor my inability to swim across it (please bear with me on this) but in that I didn't understand the river I was wading in. I assumed that the current was singular, and if I kept pushing, I could eventually overcome it. Anyone who knows rivers, however, could tell you that they are not simple. There are many hazards in a river. Sigrid Veigel, via Walter Benjamin's words, provides the basis of a solution to this problem:

> "My attempt is to express a conception of history in which the concept of progress would be completely displaced by that of the origin. The historical, understood in this way, can no longer be sought in the riverbed of a course of progress. Here, as I have already observed elsewhere, the image of an eddy replaces that of the riverbed. In such a vortex, the

earlier and the later circulate— the pre- and post-history of an occurrence or, better yet, a status of it."[1]

The problem was I thought of the river as the obstacle to overcome; that craft was about crossing the river, never that it was part of the river. I realized that the river is the tradition/originality paradox. Think of the bed of the river as tradition; stable and defined, it marks the boundaries of the river and provides a path for the water to flow. The water is the other side of the paradox: originality. It is forever in motion, shifting and twisting, but moving generally in the same direction. The problem with not understanding this before is that even if there were a bridge across the river, it would only leave me in the same place I was before, just on the other side of the river. It's a lateral move, so I or anyone else crossing the bridge won't have moved forward at all. We would be firmly rooted in a tradition alone. The river, craft, is a dynamic entity. Even the traditions as we see them are not completely stationary.

While at any given moment, we may look at a river and see moving water over a stationary bed, the passage of time proves this to be untrue. The riverbed slowly yields to the water, changing shape as the years pass, becoming deeper and wider. It may seem as though I am positioning the river as a subservient part of craft, but I assure you that's not the case. While the river represents the craft paradox between tradition and originality, the river also belongs to the construction of creativity as whole. I think craft exists in smaller pockets along the river.

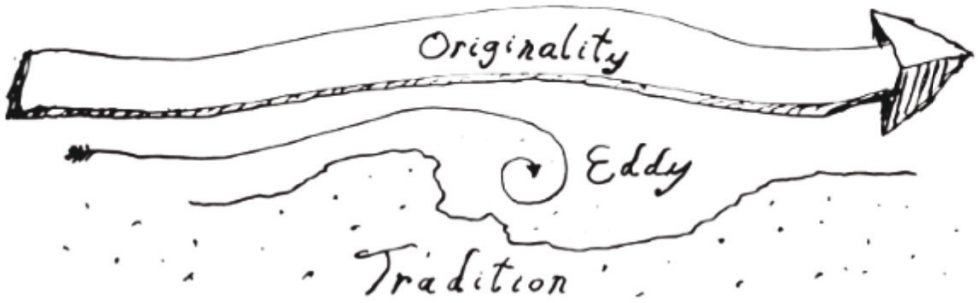


Figure 1: The Turbulent River: Image courtesy of the author

Inevitably, the flow of water changes the shape of the riverbed, so too does originality change the shape of tradition. When the current of originality flows over the rougher parts of tradition, as in figure 1, an eddy is formed. These eddies are where craft thrives. They are pools that exist within the bounds of tradition but are driven in their circular motion by originality.

We see that this version of an eddy differs slightly from that of Veigel and Benjamin, in that the eddy is not a replacement for the riverbed but is constructed by it. Tim Ingold, in a review of Cristopher Tillery's work, has this to say about eddies:

"in a world where 'persons make things and things make persons' (p.217) [citing Tilley], no space remains for such generative movements. To suppose that persons and things, and their mutually constitutive interactions, are all there is, is a bit like saying that a river is constituted by interactions between eddies and banks, forgetting that there would be neither eddies nor banks were it not for the flow of the river itself."[2]

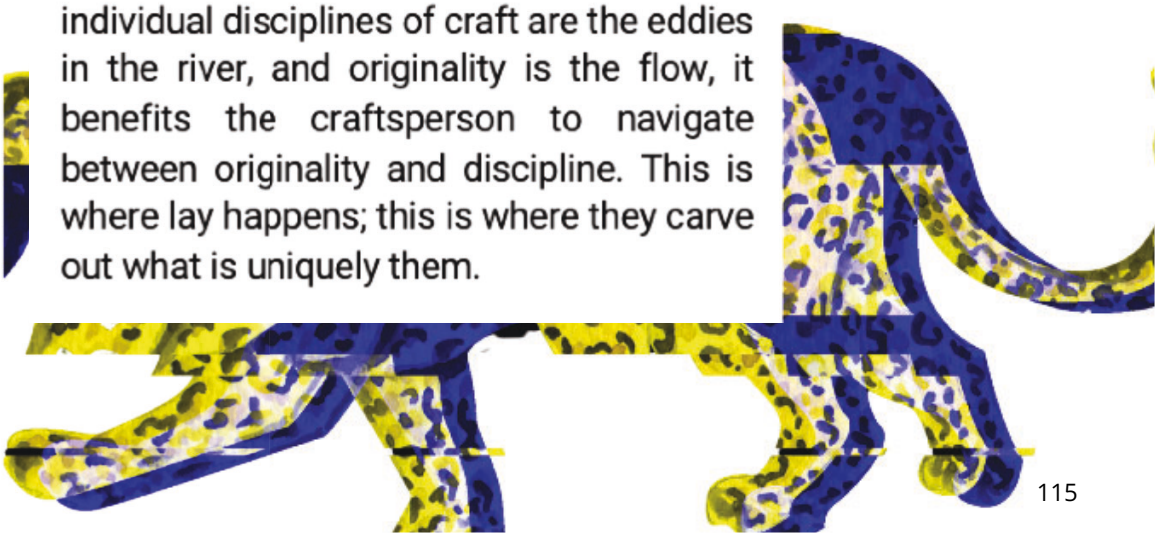
What Ingold discusses here is how the eddy is not made by the riverbed exclusively, but made by the interaction of the riverbed and the current. It is an expression more of originality than it is of tradition. The river is made up of water, the water erodes the soil over time, carving a river. My point in this is that at some time, even if it were well beyond recorded history, all traditions began life as something original once. I mentioned that the eddy is driven to a circular motion. When someone says they are going in circles, they often mean that they are stuck, incapable of moving forward. I find that this is untrue of an eddy. The water that exists in a river is made up of water from the river, so at some point, water must enter the eddy and leave it. Eddies are a point of temporary storage.

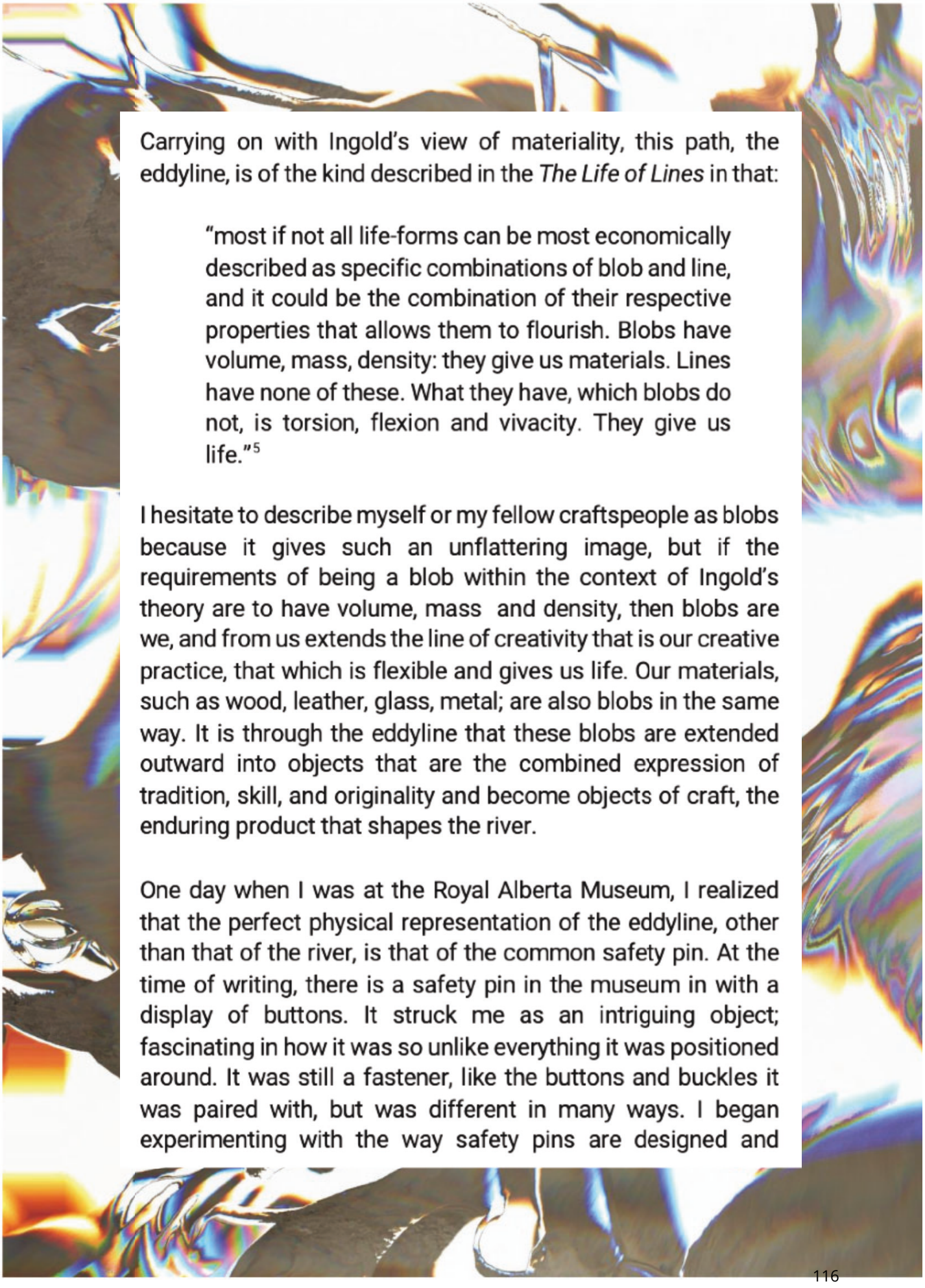
The originality circulates and picks up granules of tradition and deposits them. It is in the eddies that the most rapid changes to tradition happen.

The River Becomes the Line

This is not a huge logical leap; rivers are visibly a line. It is not the overall line-shape of the river that I am referring, but the series of lines that make up the flow, as seen in figure 1. There is the largest line of the main current, which is originality, and there are the smaller twisting lines of the eddies, but there is a third line between the eddy and the regular flow of the river called the eddyline. Similar to how Gibson's three components of visual perception are medium, substances and surfaces, the water is comprised of flow, eddies, and

eddylines. In Gibson's theory, and in Ingold's discussion of Gibson, the medium is the larger body in which we are immersed.[3] We are generally unaware of our medium (i.e. we frequently don't notice the air we breathe); it is generally there to afford movement and perception. Substances are opposite to medium, they readily afford neither movement nor perception. Between the two is the surface, the mediating interface that is "where most of the action is."[4] In the river, the eddyline is the carrier of the small particulate that neither belongs to the flow of the river, nor to the churning of the eddy. This, I would argue, is where the line on which craft changes tradition. The eddyline, in river navigation, is seen as something that needs to be crossed quickly to minimize the time that you spend exposed to both currents of the flow and the eddy, because being in one or the other is far easier than being in both. If you ask a playboater, however, being exposed to both currents is the best place to play. In the craft world, a craftsperson must stay directly on this line. While individual disciplines of craft are the eddies in the river, and originality is the flow, it benefits the craftsperson to navigate between originality and discipline. This is where lay happens; this is where they carve out what is uniquely them.





Carrying on with Ingold's view of materiality, this path, the eddyline, is of the kind described in the *The Life of Lines* in that:

> "most if not all life-forms can be most economically described as specific combinations of blob and line, and it could be the combination of their respective properties that allows them to flourish. Blobs have volume, mass, density: they give us materials. Lines have none of these. What they have, which blobs do not, is torsion, flexion and vivacity. They give us life."[5]

I hesitate to describe myself or my fellow craftspeople as blobs because it gives such an unflattering image, but if the requirements of being a blob within the context of Ingold's theory are to have volume, mass and density, then blobs are we, and from us extends the line of creativity that is our creative practice, that which is flexible and gives us life. Our materials, such as wood, leather, glass, metal; are also blobs in the same way. It is through the eddyline that these blobs are extended outward into objects that are the combined expression of tradition, skill, and originality and become objects of craft, the enduring product that shapes the river.

One day when I was at the Royal Alberta Museum, I realized that the perfect physical representation of the eddyline, other than that of the river, is that of the common safety pin. At the time of writing, there is a safety pin in the museum in with a display of buttons. It struck me as an intriguing object; fascinating in how it was so unlike everything it was positioned around. It was still a fastener, like the buttons and buckles it was paired with, but was different in many ways. I began experimenting with the way safety pins are designed and

constructed. The common safety pin is possibly one of the greatest examples we have of the relationship between craft and materiality. If I were making a safety pin from scratch, I would start by extruding an ingot, or blob, of metal into a wire. That wire, a line, can be bent into a knot, twisted into and eddy, and filed down to a point. When you look at a coiled safety pin, it is easy to forget what part of it is truly the most important. We get so concerned with the sharp point, and with concealing it away, that we forget that the power of the safety pin comes from the coil, not the point. The coil is an eddy. It is both a memory of the work that has been exerted on it in the way that Schlunke describes eddies as memory, and a source of power, as Deleuze describes power.[6] We focus on the danger associated with the sharpened point, and on the knot that that protects us from the point, but we rarely consider where the true source of the thing-power of a safety pin.[7] While the point makes it dangerous and the knot makes it safe, it is the eddy, and the eddyline that extends from it, that gives life and form to the pin. If we were to carry out the same steps for making a safety pin with rope that we just did with wire what would result is a noose. In form, they are only very minorly different, but in function and affect, they are quite separate. Returning to Deleuze's conceptualization of power, insofar as power is the potential to affect others, both items carry their power very differently. Not only in their common associations (the noose with death, and the safety pin with new life) but also in more structural ways. The noose, being made of malleable rope, cannot hold the eddyform of the spring that the safety pin can, being made of hardened metal. The spring is the powerplant of the safety pin. When open it resists being closed, and when closed it constantly seeks to drive itself open. The noose doesn't have internal power. It seeks to do nothing but be a

rope and a knot, and it is only through action that it is given power.

The power in an eddy, both that of the craft discipline and that of the safety pin, is one of both *puissance* and *pouvoir*.[8] While both French words that ostensibly mean power, I distinguish them here as Shields and Vallee's version of Deleuzian puissance in that it is more akin to the Latin word *potentia*, or physical might. Pouvoir, on the other hand, is more in line with the Foucauldian interaction of knowledge and power, and leans more toward the Latin word *potestas*, which is more like authority. A spring or river eddy contains both within it. It has the physical might stored within it, the force that holds the shape of the pin and the sharp point against the knot, keeping it from coming undone. It also contains the knowledge power of the craftsperson that made it. It is the vibrant matter of the pin; the ever-vibrating atomic topology that is crated through the craftsperson's skilled understanding.[9] Conventional river wisdom would say that an eddy is a place where the power of the river stops; that an eddy is a place to seek respite from a driving current. The spiral of the eddy exists counter to the aggressive flow of water, but that doesn't make it without power. Its puissance stems from its pouvoir; its power coming from the knowledge and memories it contains, pushing ever outward against tradition and originality. In so many ways the addition of an eddy disrupts, and improves, almost any line. The river becomes playful rapids, the rough edges of traditions are smoothed into new ones, and the noose is crafted into the infinitely better safety pin. The German word used to describe craft work is handwerk, the word "kraftwerk" means powerplant. While I think this is likely just a linguistic coincidence, I also like to think of the eddy as the source of

power, or powerplant, of change. Perhaps even that craft work is the powerplant of creativity.

Weaving into the Meshwork

During a seminar I was recently leading, I conducted a brief workshop on a making activity. I came into the room with a few balls of coloured twine and a half-dozen pairs of small snips, and not much else. I handed out the snips and the twine and told each person to take three lengths, preferably of a couple different colours. I gave them very little context to their exercise, only told them that they would be doing a technique called "finger weaving" and then gave them a very simple demonstration on how to get started. I provided almost no tools and no designated space to work in. I hardly even provided them with enough technical knowledge of what a woven structure was, much less an adequate procedure of how to complete one. Some people took up the process immediately, grasping the nature of the weave quickly. Others required more help to understand, but as the class went on, everyone began to get a little better at the weaving as the skills began to sink into their muscles. When I added a picture from a book, a traditional source knowledge, a couple students found it helpful, but their weaving did not immediately get faster, in fact, most slowed down and checked their work frequently against the image. It wasn't until they resumed working without looking at the picture constantly that the good weaving happened. The students who were the fastest were the ones who understood the tradition but were determined to make it their own procedure.

The process by which textiles are made, and which was highlighted through the exercise of finger weaving, is twisting

lines together in a way to secure them together, more commonly known as knotting. Ingold, in his book *The Life of Lines*, presents an ontological view of what knotting is:

> "There can, of course, be no knots without the performance of knotting: we should therefore commence with the verb 'to knot' and view knotting as an activity of which 'knots' are the emergent outcomes. Thus conceived, knotting is about how contrary forces of tension and friction, as in pulling tight, are generative of new forms. And it is about how forms are held in place within such a force-field or, in short, about 'making things stick'. Accordingly, our focus should be on forces and materials rather than form and content. Knotting, then, registers in a number of domains of thought and practice by which patterns of culture are sustained and bound into the interstices of human life. These include: the flows and growth patterns of materials, including air, water, cordage and wood; bodily movement and gesture, as in weaving and sewing; sensory perception, especially touch and hearing, perhaps more than (but certainly not to the exclusion of) vision; and human relationships and the sentiment that infuses them."[10]

In this understanding of knotting, it comes after the line. What starts as a blob, evolves into a line, which is then knotted with other lines to produce a meshwork.[11] Meshwork refers to the term as conceptualized by Ingold across many of his works, but most importantly in *Making*. It is the intertwining of lines to form knots, which in turn forms a mass of line. It is different

from a blob, as a blob is more of a congruous whole. Blobs are a foundational part of a mesh; the mesh itself is infinitely more complex. All textiles are expressed through knots, and knots are a fundamental element of ontological perceptions, which Ingold notes should focus more on the forces that form the knots, as opposed to the knots themselves. For Ingold, all things are interconnected through knots, and so to study the formation of a knot is to study the formation of both the material and the virtual. Ingold also affords other forms of making with the same powers he gives to weaving, likening basket weaving to a carpenter's joinery. The connection of the two:

> "touches on the more fundamental question of what it means to make things. The carpenter and the weaver are equally driven by the imperative of making, and for both, there can be no making without joining. However, the necessity of the knot is not a brittle one that allows for freedom only in the spaces left between, but a supple necessity that admits to movement as both its condition and its consequence. That is to say, it is not the necessity of predetermination, whose antonym is chance, but a necessity born out of commitment and attention to materials and to the ways they want to go. Its antonym is negligence."[12]

Here, Ingold is connecting the two through the application of specific and learned skills. These subsets of committed skills related to specific materials are disciplines, the eddies in the river. In his other book, *Making*, Ingold connects skill to the in the performance of any discipline, with the construction of the meshwork he portrays humans, makers, as "world-formers".[13] Putting pen to paper for the written word is one form of

creation, of course, but in the scope of human evolution, it is by no means the oldest. Ingold spins an intricate idea in which humans developed the ability to make first, along with our opposable thumbs. Our hands are what allow us to make, but Ingold also suggests that it is not the sole source of our ability. He argues that the hand and the mind equate the craftsperson and the material, in that they can only function because of each other. They work with each other in continuous communication, the hand providing touch and muscle memory, and the mind providing creativity and intelligence.[14] This is explained by Leroi-Gourhan as "the human hand is human because of what it makes, and not what it is."[15] By this definition, what makers tell us, above all, is our humanity. Their product, as made by the hand, is the most essential definition of what it is to be human.

Being material experts, makers can see the material changes in world and reflect them in their work. Ingold would have us believe that making the embodied knowledge they have gained allows them to create new lines in the cultural and conceptual meshwork, but document them and make them tangible at the same time in a way that connects with the average person. Understanding makers as material anthropologists deals mostly with their ability to learn and grow within a given culture. What makers lack in either the desire or ability to write, they make up for in the desire and ability to create, and both forms of communication should be considered equal provided it is approached with the same care and integrity that scholars undertake. Imagine a peer reviewed craft journal in which each piece, though visual, is the result of careful making-based research, and is designed to portray a specific element of material culture. Craft could become a bridge to people who don't want to read scholarly papers by putting objects directly

into their life that represent the same scholarly ideas. It could be a far more tangible bridge than the invisible one I used to believe would get me across the river.

The problem with world-building through craft disciplines is that, much like the river, we have difficulty conceptualizing the impact of a single eddy in the overall shape of the future riverbed. The timeline that is required to understand the eroding of traditions in the forming of new ones is so long, we are unlikely to ever see our impact. There is only one arena I know of in which we can see a version of the kind of eddyline surfing that I am proposing being used to crate changes on a condensed timeline: video games. Before I was fully embroiled in the passions of becoming a craftsperson, my first passion was an entirely digital one. I still have been known to lose an hour or two each week to the virtual realm. While this may seem as far from the metaphor of the river as I could get, the video game world is actually one of the most similar.

Video games are built with code, which are a set of imposed and constructed rigid traditions that the users of the game are supposed to follow. However, while the people who code the game would generally prefer that most players go with the flow, many of them are intent on creating eddies; often in the form of exploiting glitches or loopholes in the code. This is broadly termed as "emergent gameplay", and in the case of the players who break or exploit the code, it is usually considered unintentional emergence.[16] In cases of unintentional emergence in games, I have seen players use a traditional framework, such as explosion physics in first person shooter games, and exploit the physics of their own explosions (which don't damage them) to propel their avatar across the map. This is commonly referred to now as a "rocket jump", and it is likely

that if you refer to it as such on a gaming forum, there will be no need to explain yourself.

The significance of this is not only in how the creation of an eddy in the game affected the community of that one game tradition (the shore nearest the eddy), but over time, original thought carried the eddyline down the river and became a part of the tradition. Not only the tradition of the one game, but in the greater meshwork of gaming tradition. If this can happen for something like the rocket jump in gaming in only a few short years, then how long will it take for craft to acquire those ideas which are now seen as eddies not connected to the tradition, like 3D printing? There was a time not so long ago when "fold forming" was not a technique you would have found in any jewellery or metalsmithing books. When my jewellery mentor, Charles Lewton-Brain, coined both the term and the technique, it quickly worked its way into the craft meshwork. At a recent craft event, an aspiring jeweller was trying to describe to a small circle of craftspeople, myself included, the "cool, old technique" they found. It was fold forming, of course, and the three of us standing there who knew Charles personally exchanged smiles before explaining why the technique was indeed cool, but not nearly as old as they thought. It certainly had taken longer for fold forming to work its way into metalsmithing than the rocket jump did into gaming, but they both did so relatively recently. I realized in that moment that once upon a time the same thing probably happened for casting, soldering, and many other practices we now see as traditional metalsmithing. There may even have been people who considered the new techniques to be cheating or not real craftpersonship in some way. Craft and creativity are about riding the eddyline; pushing emergent styles and technologies until, through making, they become woven into the meshwork.

Conclusion

I am writing this conclusion from a nondescript café in Edinburgh, wondering how one concludes a paper about craft, and rivers, and safety pins, and video games. I have no idea how I got here. I don't know this city, or its cafés, or its roads. I know where the hostel is where I began, and I drew a line out from there. I walked through the streets along with many other people, many of whom were going my way, and when I saw a place that seemed to my liking, I ducked out of the current. From there I wrote this conclusion, had a cream tea, and got ready to step back into the flow on the street. Blob, to line, to eddy, to line again, woven in and out of every other person in this city doing the same thing in different ways. Edinburgh is a city of great tradition; there are buildings in the new part of town that are older than Canada as a country, but in this great tradition, it is the new things that emerge that give it its true character. This café wasn't here ten years ago, but it gave me the push I needed to conclude this paper. It is a line between the old and the new, a mediating surface, on which I can project my existence in this medium. It's windy outside today. The large safety pin I made before I left Canada and now wear as a scarf pin will come in handy, keeping the scarf I wove from flying away with the current.

Perhaps this paper is just a list of all the connecting lines that brought me here today, and the blobs they brought me from. Maybe it's the river, or maybe it's the meshwork. Honestly, I don't know for sure yet. I feel like I'm walking on the eddyline right now. It will be a while yet before I know how the riverbed has changed.

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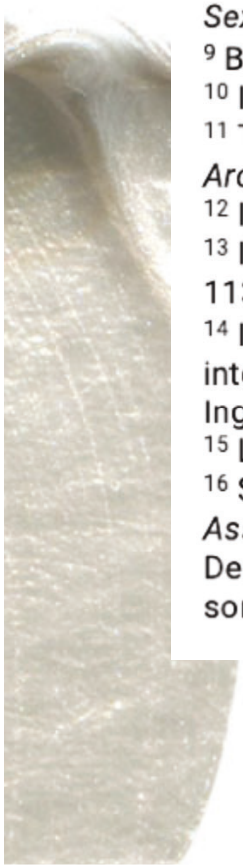
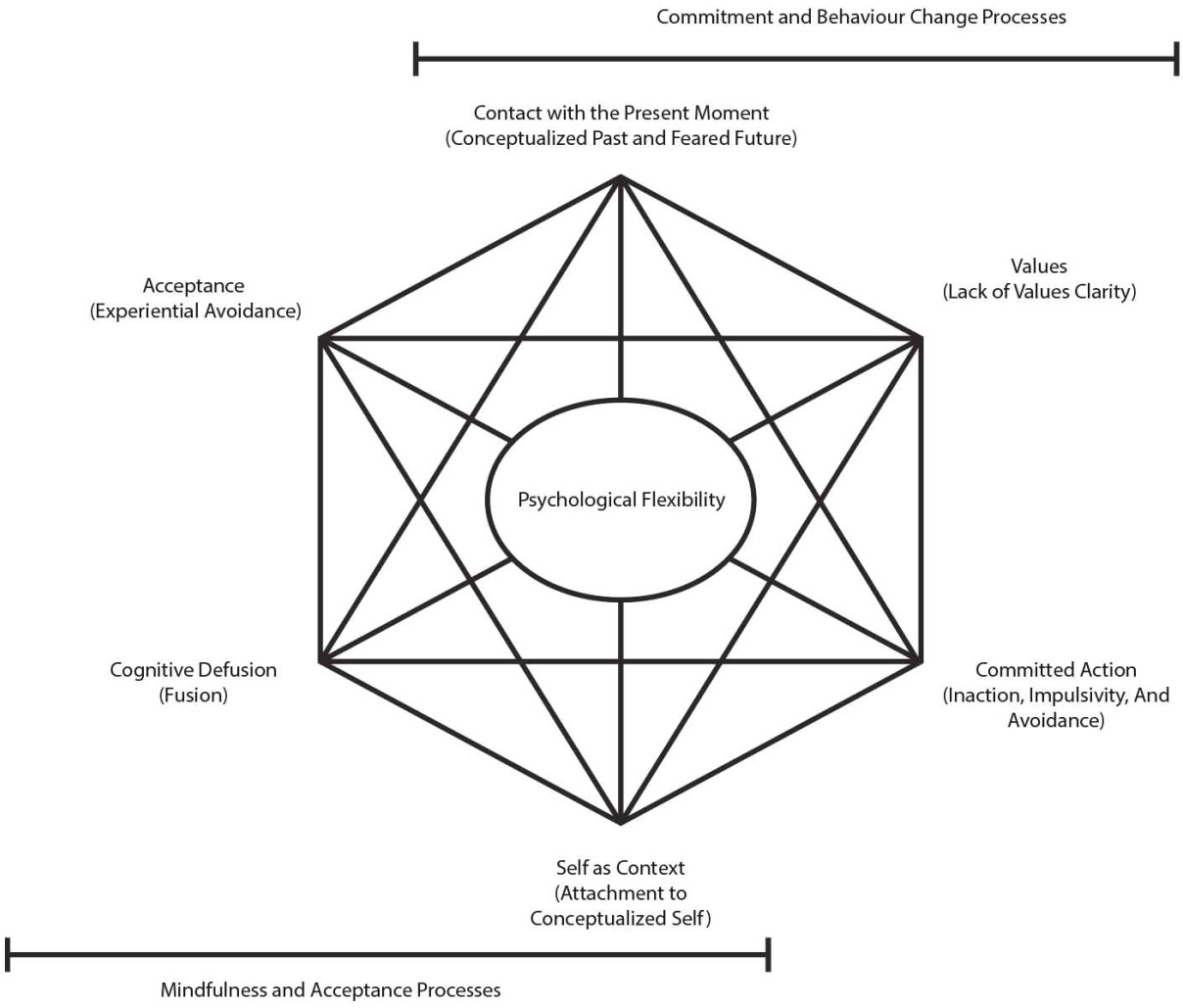
[1] Sigrid Weigel, "The Flash of Knowledge and the Temporality of Images: Walter Benjamin's Image-Based Epistemology and Its Preconditions in Visual Arts and Media History," trans. Chadwick Truscott Smith and Christine Kutschbach, *Critical Inquiry* 41, no. 2 (January 2015): 344–66, doi.org/10.1086/679079.

[2] Tim Ingold, "Comments on Christopher Tilley: *The Materiality of Stone: Explorations in Landscape Phenomenology* . Oxford: Berg, 2004.," *Norwegian Archaeological Review* 38, no. 2 (November 2005): 124, doi.org/10.1080/00293650500359078.
[3] James Gibson, *The Ecological Approach to Visual Perception* (Psychology Press, 1989), 16; Timothy Ingold, "Materials against Materiality," *Arcaeological Dialogues* 14, no. 1 (2007): 4, doi.org/10.1017/S1380203807002127.
[4] Gibson, *The Ecological Approach to Visual Perception*, 23.
[5] Tim Ingold, *The Life of Lines* (London; New York: Routledge, 2015), 4.
[6] Katrina Schlunke, "Memory and Materiality," ed. Susannah Radstone and Rosanne Kennedy, *Memory Studies* 6, no. 3 (July 2013): 253–61, https://doi.org/10.1177/1750698013482864; Rob Shields and Mickey Vallee, *Demystifying Deleuze: An Introductory Assemblage of Crucial Concepts* (Ottawa: Red Quill Bokks, 2012). Specifically I am referring to the way in which Shields and Vallee describe how Deleuze describes power.
[7] Jane Bennett, *Vibrant Matter: A Political Ecology of Things* (Durham: Duke University Press, 2010). Thing-power as described by Jane Bennet throughout the first chapter of her work.
[8] Shields and Vallee, *Demistifying Deleuze: An Introductory Assemblage of Crucial Concepts*, 144. Michel Foucault, *The History of Sexuality*, trans. Robert Hurley (Random House, 1978).
[9] Bennett, *Vibrant Matter*, 59.
[10] Ingold, *The Life of Lines*, 18.
[11] Timothy Ingold, *Making | Anthropology, Archaeology, Art and Architecture* (Routledge, 2013).
[12] Ingold, *The Life of Lines*, 23.
[13] Ingold, *Making | Anthropology, Archaeology, Art and Architecture*, 113. Quoting Martin Heidegger 1995, 117.
[14] Ingold, 117. Intelligence as referring to technical or gestural intelligence and the mnemonic aspects of technicity as described by Ingold.
[15] Leroi-Gourhan as quoted in Ingold, 115.
[16] Shields and Vallee, *Demistifying Deleuze: An Introductory Assemblage of Crucial Concepts*, 59. This relates back to the Deleuzian concept of emergence, mainly as "the way in which something new comes into the world".



Appendix D: Hayes, Strosahl, and Wilson (1999) Acceptance and Commitment Therapy (ACT)



ACT hexaflex, remade by author for image clarity with additional information from Prevedini et al. (2020)

Appendix E: Strickfaden, M & Stielow, M. (2023) Self-Knowing Exercise Book. University of Alberta.

Self-Knowing

Exercise Book

A starting point by
Megan Strickfaden & Malcolm Stielow

How do you use this exercise book?

The goal of engaging in self-knowing is to have a better sense of yourself when you're creating something for yourself or other people, or when you're working in teams. The process of writing is one way that you can reflect on who you are, but it's difficult to get at your values, beliefs, assumptions, and expectations without some probing. This is where doing these self-knowing exercises is useful.

You can use the three easy-to-use exercises in this exercise book in whatever order works best for you because self-knowing is a non-linear process. You can do these exercises on your own or with friends, but either way we encourage you to write, sketch, doodle or mindmap additional information along the way. Following your individual engagement with the exercises it is best to talk about your findings with other people.

Taste: The taste exercise is about identifying how you came to value certain items that you like or dislike. First, follow your gut reaction to each of the items on the list. The idea is to get at why you believe this, so it is important to be as honest as possible. Second, you need to determine what associations and qualities each item hold, but most importantly you need to indicate where your opinion came from. These opinion formers might be a person (family, friend, famous, etc.), media (internet, film, music, etc.), or even a context (e.g., historical time period). You may find that your opinion of an item has changed over time. This exercise helps you to track where your opinions and taste are coming from (peer groups, education, family, faith groups, etc.), which allows you to understand, question and even change your value systems.

Embodied Map: The embodied map exercise helps you to reveal how you think about and define the secrets of your own body. You may create your embodied map over a few hours or days, and you might wish to consult photographs from your past to pinpoint key transitions. You will seek out significant memories, search for things you've forgotten, and meditate on what you might be silencing. Your final embodied map may include a collage of images, doodles, diagrams, words, colours, and more. This exercise helps you to understand how complicated your body story is including the various intersectionalities of yourself. You will then be able to better relate to designing for your own body or other people's bodies.

Clothing Inventory: The clothing inventory exercise is created to provide you with a more in-depth understanding about your relationship with the objects that are nearest to your body: clothing, accessories, technologies, assistive devices, etc. The aim of this exercise is for you to be attentive to the various relationships you have with the things that touch your body that are personal, and deeply related to the life you live. This exercise helps you to explore your personal style and identity, and to examine how you value the objects that are nearest to your body. For example, you may discover that you prefer items that are useful over ones that are aesthetically pleasing, or you may discover personal trends related to specific days or events. No matter what you uncover about your clothing, you will be able to relate to how other people wear their clothing and recognize that we all express ourselves through clothing in different ways.

Required Supplies:

- This booklet, ideally printed
- Notebook or journal to contain your reflective writing
- Old magazines, newspapers, coloured paper (if you want to collage)
- UHU glue stick (if you want to collage)
- Pens, pencils, markers

Taste

This exercise is designed to kick-start self-knowing. Go through the list of things below and decide how you feel about each one, on a scale of "really pretty" to "really ugly". For each thing, also go through the four categories and fill them in as best you can. Feel free to add your own items to the list and revisit this exercise as often as you like.

Associations: These are the first things that come to mind when you think of the listed item.

Qualities: These are words that you may use to describe the item physically or emotionally.

Opinion Formers: These are things that helped shape the opinion you currently have about the thing on the list. Opinion formers can be people, experiences, or even other items.

Disagreers: These are things that disagree with your opinion, or actively challenge the opinion you currently hold.

A Tooled Western Belt

- Really Pretty
- Pretty
- Okay
- Ugly
- Really Ugly

Associations	Qualities
Opinion Formers	Disagreers

Painting on Black Velvet

- Really Pretty
- Pretty
- Okay
- Ugly
- Really Ugly

Associations	Qualities
Opinion Formers	Disagreers

Graffiti

- Really Pretty
- Pretty
- Okay
- Ugly
- Really Ugly

Associations	Qualities
Opinion Formers	Disagreers

Vegan Leather

- Really Pretty
- Pretty
- Okay
- Ugly
- Really Ugly

Associations	Qualities
Opinion Formers	Disagreers

A Picasso Painting

- Really Pretty
- Pretty
- Okay
- Ugly
- Really Ugly

Associations	Qualities
Opinion Formers	Disagreers

Purse Sized Dogs

- Really Pretty
- Pretty
- Okay
- Ugly
- Really Ugly

Associations	Qualities
Opinion Formers	Disagreers

Lincoln Continental

- Really Pretty
- Pretty
- Okay
- Ugly
- Really Ugly

Associations	Qualities
Opinion Formers	Disagreers

Yoga Pants

- Really Pretty
- Pretty
- Okay
- Ugly
- Really Ugly

Associations	Qualities
Opinion Formers	Disagreers

Cigar Store Indian

- Really Pretty
- Pretty
- Okay
- Ugly
- Really Ugly

Associations	Qualities
Opinion Formers	Disagreers

La-Z Boy Recliner

- Really Pretty
- Pretty
- Okay
- Ugly
- Really Ugly

Associations	Qualities
Opinion Formers	Disagreers

Celine Dion Vegas Show

- Really Pretty
- Pretty
- Okay
- Ugly
- Really Ugly

Associations	Qualities
Opinion Formers	Disagreers

Diamond Ring

- Really Pretty
- Pretty
- Okay
- Ugly
- Really Ugly

Associations	Qualities
Opinion Formers	Disagreers

Female Body Builder

- Really Pretty
- Pretty
- Okay
- Ugly
- Really Ugly

Associations	Qualities
Opinion Formers	Disagreers

A Tim Burton Film

- Really Pretty
- Pretty
- Okay
- Ugly
- Really Ugly

Associations	Qualities
Opinion Formers	Disagreers

Stiletto Heels

- Really Pretty
- Pretty
- Okay
- Ugly
- Really Ugly

Associations	Qualities
Opinion Formers	Disagreers

Cirque du Solei

- Really Pretty
- Pretty
- Okay
- Ugly
- Really Ugly

Associations	Qualities
Opinion Formers	Disagreers

Stealth Bomber

- Really Pretty
- Pretty
- Okay
- Ugly
- Really Ugly

Associations	Qualities
Opinion Formers	Disagreers

Edmonton City Hall

- Really Pretty
- Pretty
- Okay
- Ugly
- Really Ugly

Associations	Qualities
Opinion Formers	Disagreers

Ugg Boots

- Really Pretty
- Pretty
- Okay
- Ugly
- Really Ugly

Associations	Qualities
Opinion Formers	Disagreers

Elvis Postage Stamp

- Really Pretty
- Pretty
- Okay
- Ugly
- Really Ugly

Associations	Qualities
Opinion Formers	Disagreers

An Opera

- Really Pretty
- Pretty
- Okay
- Ugly
- Really Ugly

Associations	Qualities
Opinion Formers	Disagreers

Man Bun

- Really Pretty
- Pretty
- Okay
- Ugly
- Really Ugly

Associations	Qualities
Opinion Formers	Disagreers

Fur Coat

- Really Pretty
- Pretty
- Okay
- Ugly
- Really Ugly

Associations	Qualities
Opinion Formers	Disagreers

In Style Magazine

- Really Pretty
- Pretty
- Okay
- Ugly
- Really Ugly

Associations	Qualities
Opinion Formers	Disagreers

Low Rider Jeans

- Really Pretty
- Pretty
- Okay
- Ugly
- Really Ugly

Associations	Qualities
Opinion Formers	Disagreers

A Bowtie

- Really Pretty
- Pretty
- Okay
- Ugly
- Really Ugly

Associations	Qualities
Opinion Formers	Disagreers

American Traditional Tattoo

- Really Pretty
- Pretty
- Okay
- Ugly
- Really Ugly

Associations	Qualities
Opinion Formers	Disagreers

Fanny Pack

- Really Pretty
- Pretty
- Okay
- Ugly
- Really Ugly

Associations	Qualities
Opinion Formers	Disagreers

Body Branding

- Really Pretty
- Pretty
- Okay
- Ugly
- Really Ugly

Associations	Qualities
Opinion Formers	Disagreers

more space if you need it

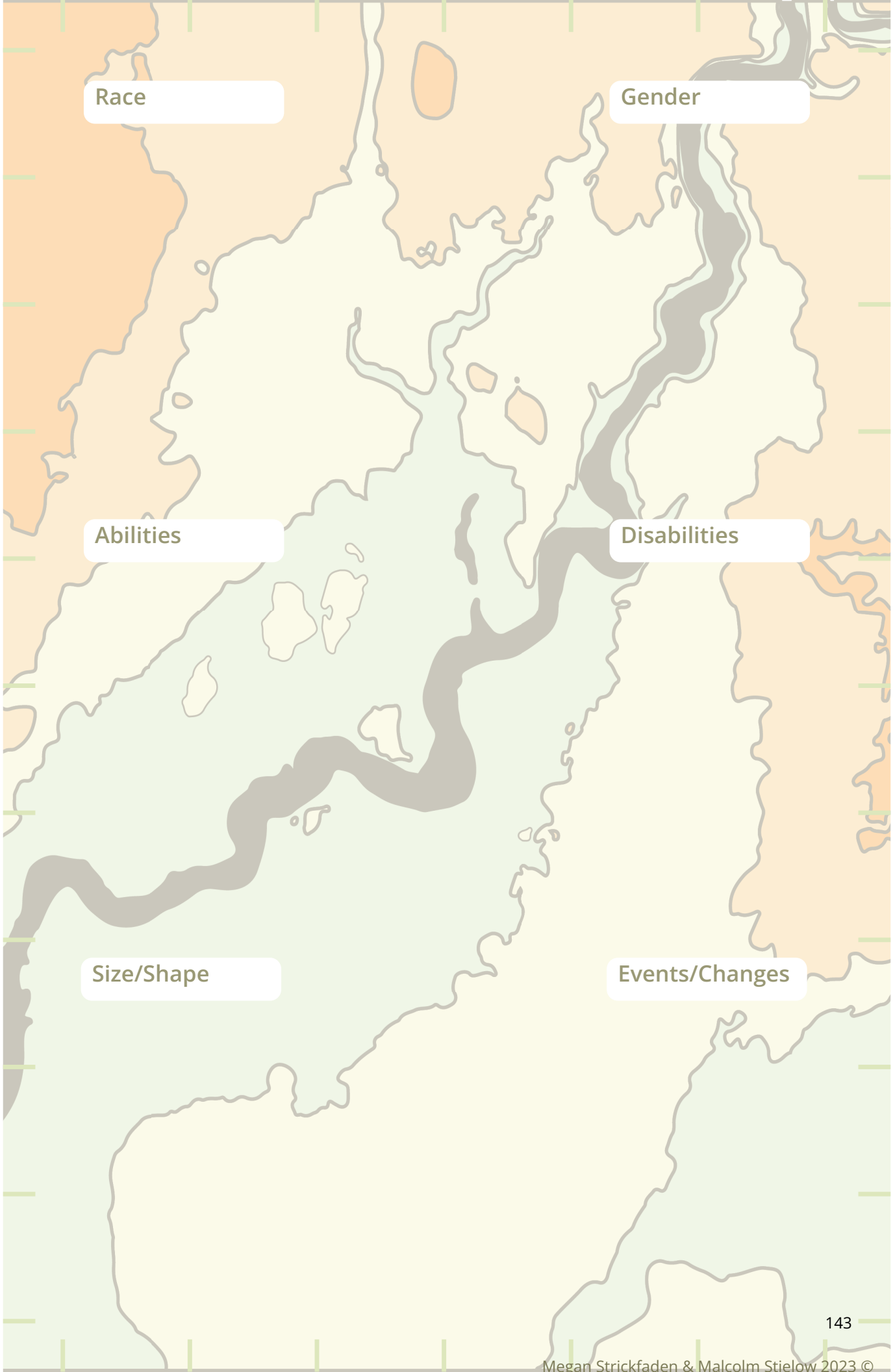
Embodied Map

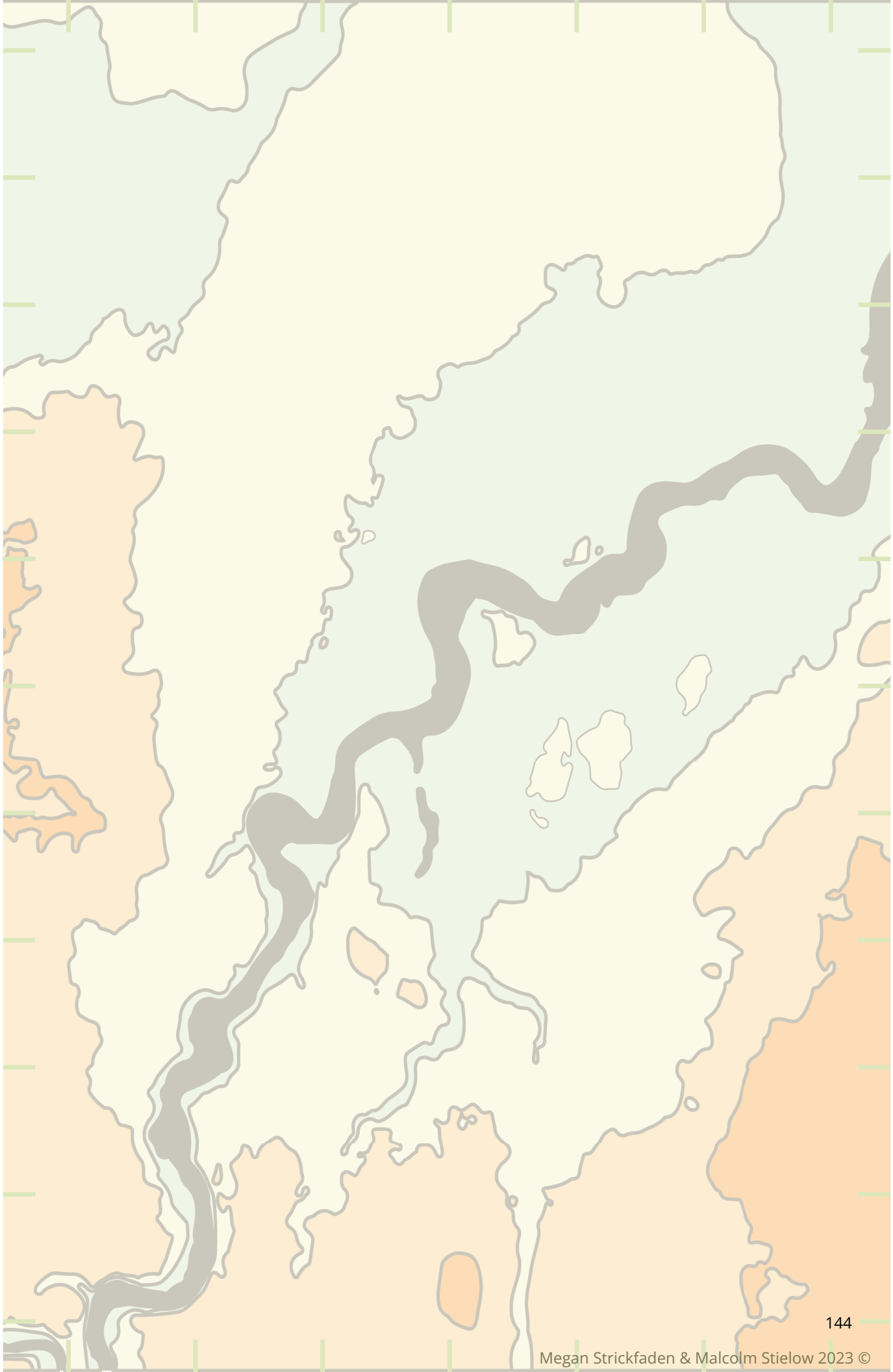
The objectives of this exercise are to help you to reveal how you think about and define bodies and to get at the secrets of your own body[1]. You will need to think about your personal identity and relationships to race, sexuality, gender, ability, disability and more. When it comes to our bodies there are many significant and small changes that occur over long periods of time or quite instantaneously. The secrets of your body will likely include hormonal shifts, body alterations (e.g., hair removal, wearing body modifying garments, surgeries, tattoos), details related to your separate body parts and senses, and deep psychological feelings you had (or still have) about your body.

To create your embodied map, you will need to spend some time mapping out the moments in your life as a list. From this list you will create your 'Embodied Map' that includes pertinent details. Your 'Embodied Map' will be a drawing or collage where you use photographs or you may draw/sketch out the core aspects of body secrets. You may wish to use the (mostly) blank page provided, but working on a larger sheet is also encouraged.

This exercise will help you to better understand how complicated your body story is and better understand the various intersectionalities of yourself.

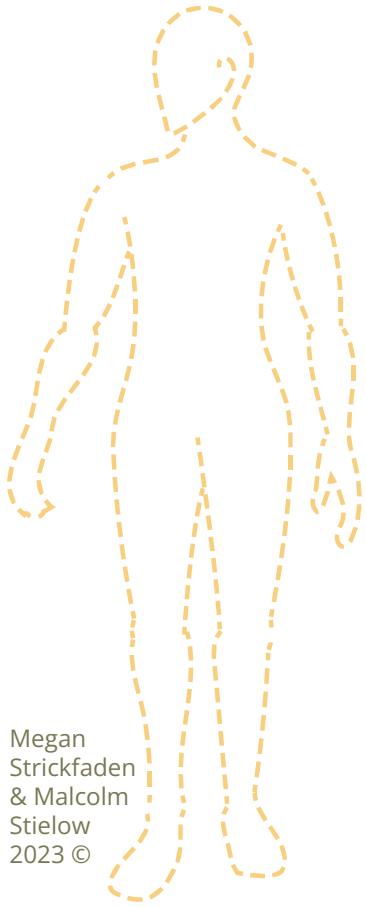
[1]Rice, Carla (2009) Imagining the Other? Ethical Challenges of Researching and Writing Women's Embodied Lives, Feminism & Psychology, 19(2), 245-266.





Clothing Inventory

The aim of this exercise is for you to be attentive to the various relationships you have with clothing as objects that are personal, and deeply related to the life you live. For the purpose of this exercise, clothing is defined as ANY portable object that you put on your body (i.e., shirt, pants, jackets, accessories, jewellery, socks, shoes). Clothing refers to all the things you wear when you leave the house to go to work; what you wear at work; what you wear when you go out with friends or at home after work; what you wear (or don't wear) throughout or for part of the night when you go to bed; and what you wear when you get up in the middle of the night to use the washroom. In addition to creating an inventory of your clothing, you will need to inventory what circumstance you wear those clothes. One way to look at these circumstances is to consider the "clothing taskscape"[1]. The 'One-week Clothing Inventory' should be completed in 7 days without interruption, which means it covers weekdays and a weekend. It doesn't matter what day you begin or finish. Once you've completed the exercise you will want to review your entire week and look for patterns, contrasts, and surprising elements that pop up about your longitudinal relationship with clothing.



Megan Strickfaden & Malcolm Stielow 2023 ©

Day: U M T W R F S **Date:** y y y y / m m / d d

Head + Hair	Top
Bottom	Accessories

Comments + Context

[1]Tullio-Pow, S., & Strickfaden, M. (2020). Clothing Taskscape as an Approach Toward Assessment of User Needs. Clothing and Textiles Research Journal, 40(1), 19–36. https://doi.org/10.1177/0887302X20968818

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Head + Hair

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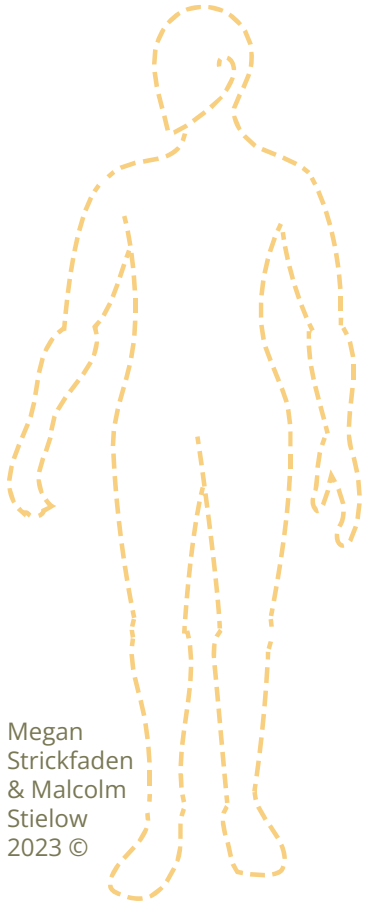
Bottom

Accessories

Comments + Context



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Accessories

Comments + Context

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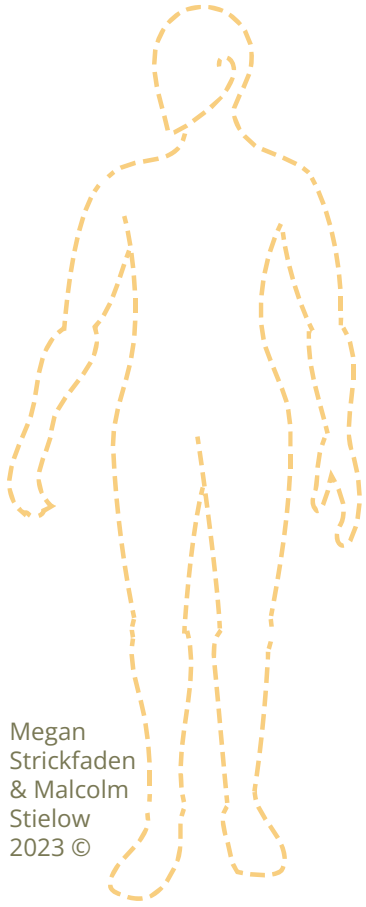
Head + Hair

Top

Bottom

Accessories

Comments + Context



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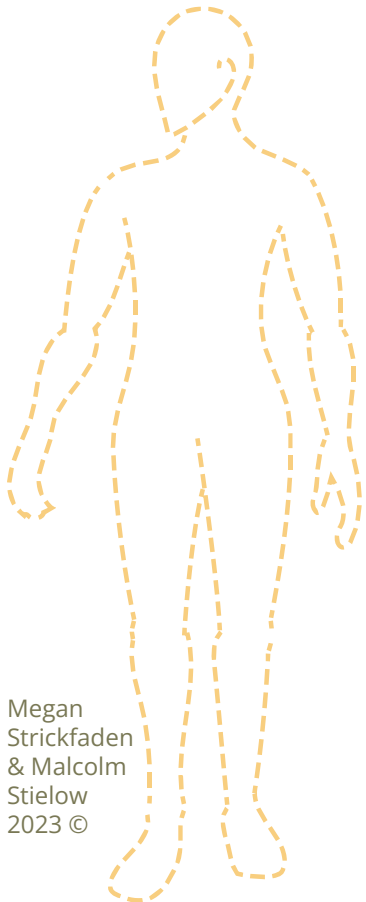
Comments + Context



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Accessories

Comments + Context

Century Schoolbook by Morris Fuller Benton (body text)

Open Sans by Steve Mattison (headers)

Montserrat by Julieta Ulanovsky (titles)

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Book design and layout by Malcolm Stielow 2020-2023