



E_Motion: a critical approach to ethnographic observations in nursing homes

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ABSTRACT_

This project is about humans. It is about people and their waning days. It is about the inevitability of decline and the acceptance of the inexorability of our life cycle. The end of life that's usually spent in nursing homes and devoid of things that once meant something to us. It is an attempt to observe and, above all, sympathize with those who already – and inevitably – can have a glimpse of the last days of their lives. Observing and yielding much more than a snapshot of a setting and the people within. A study that fosters the redemption of the researcher's background, assumptions and culture. An observation method that does not pretend to be free from all sorts of biases, but one that considers pre-existing circumstances and makes the most out of them, refining subjectivity and nurturing interpretative accuracy sharp enough to explore alternative design values. This project explores to what extent critical design can be informed by critical design insights and bear inspiring, engaging and provocative outcomes able to subvert the status quo and cultivate an aesthetic sensibility. And it does so in nursing homes, among elderly residents.

KEYWORDS_

Critical design, critical ethnography, social function, motion, pinball machine, aesthetics, elderly, residential care

CONTENTS_

3_	Introduction
3_	Background
4_	Care and Transformation: from Pragmatism to a Critical Approach
5_	Time Spent Volunteering
7_	Ideas Turning up
8_	Critical Design as a Means of Ethnographic Observation
9_	Methodology
10_	Critical Analysis
10_	On the Ground: ethnography
12_	The Interleaved Motion
14_	Detailed Description of Design Responses/Acts of Making
15_	The Prototype Build
18_	The Responses of Others
19_	Refining the Pinball Machine
20_	Add-on Kits
22_	A Ludic Dialogical Object
23_	A Final Note
23_	Glossary of Terms
24_	List of Figures
24_	References

ACKNOWLEDGEMENTS_

My parents, my son, my sisters and brother, my dear supervisor and professors.

INTRODUCTION_

This project was born under the direct influence of a growing restlessness regarding my original occupation as a graphic designer and marketing professional, working primarily on advertising and branding for large and small retail companies. A sensible uneasiness about social issues and the positive actions I was omitting in a day-to-day occupation that not only overlooked these causes but also dealt with methods and solutions that, quite often, would even work against their most basic premises and needs.

In fact, this concern made me work towards the incorporation of a social function¹ that could push the project out of conventional industry-focused design work and related (marketing, trading, promotion, retail, consumers, profit...) into a more human-centred topic that I was deeply missing. Such psychological/political disquietude was – most certainly – triggered by social/economical vicissitudes that Brazil was facing at that time and that has continued to grow worse. The rise of poverty and inequalities of all sorts in the country I was born in was the volatile fuel that propelled my increasing sense of inutility (not to say futility) in the exercise of my profession.

This research is an incidental result of a series of field observations in nursing homes done throughout the years 2018 and 2019. It is the consequence of an interpretative gap identified by well-conducted realistic ethnography observations. Well-conducted and yet not exhaustive, this is the "Achilles tendon" of conventional forms of ethnography. Depending on the subject and scope of its findings, it does not matter if it is meticulously planned and neatly performed; traditional ethnography's intrinsic objectiveness and detached methodology are seamlessly suited for quantitative-oriented data gathering and statistical research. But when it comes to all other intricacies of human interactions and behaviours, significant or minimal, muted or amplified, concealed or explicit, it falls short in its main goal and rarely can output an enlightening profile of a situation or fact.

BACKGROUND_

I graduated in both graphic and industrial design back in the early 2000s. As a professional designer, I worked for many corporate clients (retail, services etc) and, as one could easily infer, these companies were hiring my expertise to leverage their profit. Nothing wrong with it, as I was born and raised in a capitalist economy and our professional relationship was seamlessly suited to the actual conjuncture. In this context, my creative work seemed well-tailored for my clients and was quite successful in achieving their expectations (largely according to their marketing plans). This encouraged me to pursue a Marketing MBA as a means to further develop my design practice by

incorporating marketing abilities. The MBA proved to be a good academic move, I was able to improve my creative accuracy towards the clients' plans and legitimately collaborate with their strategies aiming for better results.

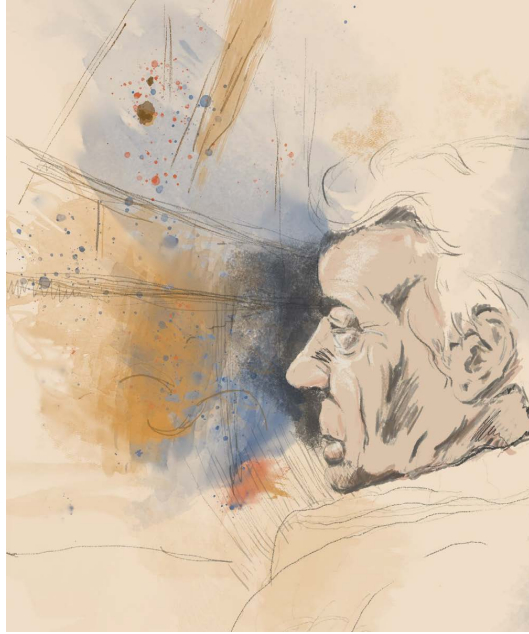
Still, even though I effectively added new skills and value to my professional practice, I had a growing skepticism. I found myself concerned with the workings of the corporate world – its implications on society were starting to undermine the perception I had about my own professional contributions. The absence of a feasible social function in my career could be summed up by companies' pretentious (and hopelessly ineffective) policies of "sustainable activities". Their shallow discourse towards an equal society prompted me to pursue further education, this time in the social field. Doing a Law degree was a practical (and in-depth) way of achieving such prospects. It allowed for a deeper understanding of social sciences not only as propaedeutic disciplines (solid theoretical ground for policies' hermeneutical studies) but (and most important) also as key instruments that sharpen critical abilities to unveil hidden agendas and structures of domination in the status quo that may leverage inequality and discrimination.

Time passed. Transferring these sociological and critical refinements back to my design practice is not an instant and easy phenomenon since the activity of design is historically grounded in the capitalist production chain and, unfortunately, is one of the most effective tools to perpetuate dominance structures. For myself, the act of transference has been a purposeful abdication exercise in favour of an equal society. It comes with a recognition that design practice can be – and must be – a crucial tool of social transformation. And this is why this project humbly exists.

Care and Transformation: From Pragmatism to a Critical Approach

When I first started visiting and working at the Youville Residence Care home my goal, besides genuinely helping, was to observe the setting with the intention to grasp insights of human interactions and care service practices. I was looking for foreseeable and actual gaps within their day-to-day routines so that I could eventually create a list of problems that could be potentially addressed with design. This was a pragmatic – and absolutely legit – attempt to come up with a practical solution that would ultimately solve or minimize a social/technical gap through a design perspective.

My shift towards a skeptic outcome began in the Spring of 2019 when the vivid dynamics of the setting and their "actors" (elderly, health professionals and relatives) caught my attention. This unexpected situation nourished my curiosity to the point where I started to adjust my observations over a critical suspicion triggered by the disparity between what I was witnessing and what the common sense paradigm has taught me. This was a much-welcomed discrepancy (or reality shock) that led to a natural change in my approach. It efficiently sharpened my design sensibility towards the creation of a provocative and aesthetically refined object. Realizing and appropriating the aforementioned motion phenomenon within the setting was a direct result of this unexpected understanding.



Fig_1_Initial work - Interpretation of ethnographic observations at the Youville Residential Care setting



Fig_2_later interpretation - Illustration for the pinball machine's backlight. Critical interpretation of the Youville Residential Care setting

The following section describes aspects of my experience volunteering in the residential home and the insights I uncovered.

TIME SPENT VOLUNTEERING_

While taking on my Research Assistant work at the Youville Residence Care facility I would often volunteer to do other works such as minor renovations on the facility itself. It was while doing one of these seemingly technical and indifferent tasks that I had one of the most striking experiences I was refinishing a door frame of one of the rooms in the facility. I had just begun working on the door when I noticed an elderly lady slowly walking towards me all the while attentively watching my brushstrokes as I worked at my task. She didn't halt her pace but kept on walking past me to the other side of the long aisle. At the end of the aisle, she turned and returned, walking by me once more. Her "walk by's" continued a few more times. Each and every time she shortened her distance before coming back again. It was clear to me she was too shy to simply stay beside me while I did the job, so I gave it a shot and asked a nurse who was close by if I could grab a chair so the lady could sit near to the door. To my surprise the lady not only seized the "VIP" position; she readily started a very prolific conversation with me, even though I couldn't understand a single word of her native language! The "conversation" carried on for the entire length of my job. I was absolutely overwhelmed and moved by every second I spent engaging with her. She seemed happy too!

Officially, as a separated, disengaged observer, I had the opportunity to take in the care home site and its dwellers from a safe and objective vantage point that provided me with a view of the institution itself and a holistic picture of the wealth of engagements that happen there. I was able to view caregivers assisting the elderly, relatives coming for routine visits, residents

talking to each other. Relations between people were all infused with a comforting background of intimacy and consideration. While this was helpful and informative, it was the inevitable subjective experiences like the one I describe above that invariably had the most profound effect on me – enhancing my reflection on lived experiences, sharpening critical thinking and ultimately reinforcing a deeper empathy for the people I met in this context.

As I became acquainted with the elderly and their surroundings, my experiences in the home provided me with a growing awareness of the people around me. While I did not ask, people invariably spoke to me and shared stories about their lives, families, hobbies, jobs. In the case of the residents, they often spoke of memories of a life they didn't have anymore. A good example of this occurred on a sunny weekday in the Spring of 2019 while I was participating in a group drawing activity at the Youville Residence Care home. The very kind lady who I was helping told me she was an avid painter and that she really missed not being able to paint since she had moved to the care home. This wasn't the only episode when I was told about the activities and things residents had left behind after transitioning to the assisted living facility and even though some of the things people missed would certainly have been quite difficult to be offered in the care home context, many others, it seemed to me, could be easily resumed.



Fig. 3_Doing volunteer work and an elderly closely watching

As the elder residents shared their past with me, I realized I was coming to know these people as individuals. I started getting a clearer view of the day-to-day activities that took place in the facilities, the medical routines and care support. This pretty, quiet, and comforting place could also be a site of hectic energy- a place that was very busy. This was especially the case during music activities and daily meals. I noticed that the "transit" of caregivers, nurses, relatives (and even the elderly) to these sites of activity within the home was often very intense, with professionals assisting each and every resident at their own spots. The individual support provided by these people working in the care home ranged from administering medicine, brief medical assessments to words of care and love. Observing this made me start to think and reflect on the role of these personal gestures and the whole dynamics they fit into.

I was really intrigued with the (outwardly) chaotic movement of health professionals inside the activities/dining room and how they were absolutely capable of not only assisting the elderly with their medical needs but also delivering a word of comfort. Their shifting trajectories between tables, chairs, wheelchairs and people looked like something quite familiar, but still unclear to me at this point.

IDEAS TURNING UP

Time in the shower often offers me a special contemplative space. When I have something that's been puzzling me or challenging my knowledge and expectations of work (and life), I intuitively stand still under the spray of warm water and start thinking about the things I have to address. Interestingly enough, several (if not all!) of my most effective ideas have arisen from these isolated, reflective moments of reasoning under the stream of water. It was here, in these circumstances that the main topic of my thesis was born: I realized that all the actions I had been observing, motivating and leveraged by the feeling of omnipresent empathy and compassion (the shifting and nimble movements of the caregivers, the will to assist and help the most people as possible, the overall) resembled the dynamics of a pinball machine!

Intrigued as I was, I let it sit for a while and gave myself a bit of time to assimilate my somewhat awkward intuitive, non-objective realization. I invariably began to assess the respective characteristics of the home and the pinball machine. It didn't take me very long to realize that not only the physics were quite similar (with the shifting movements and vectorial trajectories), but they also shared an apparently similar goal: health professionals draw their shifting trajectories by swiftly dodging the tables and chairs on their paths or by approaching and departing from every single elderly resident they assist. The more people they manage to reach and assist, the better it is and the more intertwined their trajectory is. The same abstraction can be easily grasped from the pinball game functioning, where the steel ball draws the most shifting paths when it hits and bounces on the most posts on its way. And the more posts it hits, the more points one can get.

Even a subtle (yet equally suitable) parallel one can infer relates to the therapeutic abilities of the pinball machine and one prominent example is Robert Gagno. He lives on the autism spectrum and he is currently Canada's n°1 pinball player. He was introduced to the pinball game at the age of ten – after their parents had been struggling with his mental symptoms for quite some time – and immediately bonded to it. It is believed that his condition has made him

a better player, granting him multiple championships, but it is also true that playing pinball has helped him live with autism. His mother states that (Bates, 2017, May 30):

"It's helped with things like turn-taking, sportsmanship and making small talk and it's certainly boosted his self-esteem."

And Robert says that it has also provided opportunities to make friends.

"I like playing with other people in leagues. There are good players in Vancouver and it is fun to try and beat each other's scores, or show new players how to play the game."¹

It was quite interesting to realize that a purely abstract/subjective metaphor (shifting movements) can also and reasonably share the objective purpose of reaching the most people/posts possible within a determined time frame!

CRITICAL DESIGN AS A MEANS OF ETHNOGRAPHIC OBSERVATION

Over the past several years, through my Master's studies, I have explored a subjective, critical design approach to ethnographic observation. I have done so within the context of the elderly (and their engagements) within nursing homes. Environments like that can yield engaging and provocative outcomes if approached outside the conventions of traditional ethnographic practices (Plowman, 2003, p. 32) when explicitly adopting critical design provocations (Bardzell, 2013, p. 3298) as inspirational premises in addition to responsive (and arguably intuitive) acts of design connected to memories of field observations.

My work has drawn insight and perspective from my own critical design assumptions. This thesis document presents and discusses a critical interpretation of observed facts. It demonstrates how a skeptical approach led by the appropriation of a hermeneutic of suspicion (Bardzell, 2013, p. 3301) inspired the creation of a critical design object.

As a design researcher, adopting a skeptical view of the setting (care homes), enabled me to abandon preconceptions of a rhetorical common sense such as the apparent perception of end-of-life, nearing death and ubiquitous hopelessness permeating those spaces. This latter auto-imposed mindset might have helped me develop a clearer view of the environment, but in hindsight, I think that even the most prejudiced person (here without a derogatory meaning) would have immediately recognized the bias. The playful and happy setting I volunteered in 'gushes' with vibrant life. Counter to the tropes often connected to end-of-life, the elderly, caregivers and families I observed displayed joy and vivacity for all to see.

Such cheery panorama played a significant role in my choice for a joyous and colourful visuality in my own design actions. I deliberately replicated the surprisingly vivid qualities of the care home not only in order to subjectively express a sense of taste but also, and in consonance with Dune and Raby, to subvert the status quo (Bardzell, 2013, p.

3299). Similar to the approach identified by Noël Carroll, my work was an effort to foster an aesthetic sensibility and cultivate an appreciation for the refined (Sibley, 2008, p. 537). In my case, these elements can be observed in the self-conscious decision to adopt a highly playful (and even ironic) visuality in a familiar object that – despite clearly being a ludic and dynamic game – critically reflects the phenomena and the character of the setting it is responding to (care homes). The discrepancy between my (and others) assumed views of the care home site I came to know vs the lived reality is countered by my design provocation. There is a transgressive facet embedded in this duality, which could be, according to Stewart Hall (26, pp.282-3), a clear indication of the confrontational, adversarial nature of the critical theory.

METHODOLOGY_

As introduced in the section above, this project has employed critical ethnography observations within nursing homes followed by a skeptical interpretation (Bardzell, 2013, p. 3301) and assumptions of critical design. The work asserts that this critical approach is feasible as a practical design research method able to bear inspiring and provocative resources of visual, material and descriptive outputs.

When the design researcher deliberately asserts their background (preferences, mood, afflictions, political position, preconceptions) and understands it not as a disadvantage (to objectivity) but rather as an asset that contributes to a meaningful design research trajectory (and most importantly) that is for the good of the observed individuals in a specific researched context, they are advocating for social function by proactively using their background in favour of social transformation. This project explores how the designer considers the benefit/insight that their own personal narrative and background can serve the research and its subjects, using this as a means to tailor and inform the process of interpretation, assessment and application of new propositions. This approach openly works with ubiquitous subjectivity markings. In this sense, the research is also teleological, since it validates the assumptions of the researcher, acknowledging that the personal perspective/contribution of this individual can unquestionably frame the entire process and provide a better-suited result in its core feature: the social good.

The initial framing of my project reached a point where the set of theoretical backings discussed above were starting to be tested. This happened as the veiled characters of the nursing homes' daily life started to arise. Subjectively extrapolating the analysis of explicit manifest actions, my research began to reach deeper layers of meanings and signs that were not so obvious at a first glimpse; but were effectively unveiled with the benefit of a critical approach.

One noticeable result of this skeptical interpretation is the recognition of the subtle relation between the paths described by health professionals motions within the gathering room – among tables, chairs, wheelchairs and people – to the existence of any sort of engagement they have with residents along the way. The patterns readily indicate whether there was any sort of interaction throughout the courses they describe. A continuous (even straight) trajectory denotes the absence of any interaction and a winding,

interleaved path indicates the possibility of at least one interaction with the elderly residents.

For me, this finding triggered a series of critical acts of making through design that culminated in a *sui generis* result that surprisingly shares the core goals of a much-desired accomplishment in a care facility: a pinball machine. Just like the assistance in a nursing home's gathering room, where (presumably) the more engagements the staff have with seniors – corresponding to a winding, interleaved path –, the better, the most uneven and bumpy trajectory that a flipper ball describes, the more points the player will score.

CRITICAL ANALYSIS_

Throughout my work, I have aimed to incorporate social function by recognizing that human life is not intelligible except through human interrelations and that society is an organic system of solidarity. In an attempt to ground my observation assessments on solid design research parameters and to effectively aggregate social relevance to the project, I decided to adopt a critical approach to structure and evaluate my interpretations. This design research method, benefited by a qualitative ethnographic study, allows for a qualified evaluation and incorporation of the several distinct significances of human relations I was observing.

By preliminary adopting an interpretation method described by Noël Carroll as the hermeneutics of suspicion (Bardzell, 2013, p. 3301), I proposed myself, as a design researcher, to approach the object of study with a deliberate skepticism, bringing with me ideologies and other personal backgrounds that facilitate its application. In fact, the research wouldn't be critical if it was not permeated by personal knowledge assets (concepts) that unquestionably delineate critical theory.

When skeptically observing the care homes' settings, I tried to establish a dialectical contrast between what I was expecting to see and what I was in fact watching, so that I could build a utopian (yet reasonable) image of the true nature and feel of those environments. I had a clear picture of what I knew and was expecting to see: an ultimately dull and sad place, decrepit and devoid of the faintest trace of hope. And this is most certainly what the majority of people would expect from places like that.

The fact is that I was not prepared to see what I saw. Despite my most skeptical reasonings, I was presented with something way beyond (and definitely opposed) to what my expectations were. An absolutely vivid, bright, busy environment. I saw dedicated caregivers willingly engaging and assisting happy and vivid elderly people. This distinction made me realize that I was indeed facing a remarkable dialectical confrontation of a commonly imagined construction and a contrasting reality, so I thought I could figure out a way to work on this finding and critically undermine the prevalent assumption that residential care homes' times are the saddest and hopeless completion of our lives.

On the Ground: ethnography

The most striking phenomena I could grasp from my qualitative observations were the ones that related to the motions and paths described within the care facilities' spaces. To me, they allegorically express, as mentioned before, the splendour and liveliness that surprisingly emanate from these places, and could certainly be used to critically subvert the status quo view around these places and the reality within.

After a series of field observations in nursing homes such as the Youville Residence and St. Paul's Hospital and following a strict set of objective parameters, it was increasingly clear that even though the numbers provided a valuable set of data – mostly grading interactions between caregivers and residents –, the studies ultimately became a blurred snapshot of what was going on within that setting. They were far from depicting the warmth and kindness that nurses, caregivers and residents mutually shared in those spaces; they were not able to take even a quick glimpse of the isolated (and funny at a certain point) grumpinesses and stubbornness that stirred the quiet atmosphere from time to time. They were silent in regards to the old lady's amazing knitting skill as well as to her mismatched flip-flops. The contrast between what I had just seen and subjectively interpreted, and those numbers were showing afterwards was far too discrepant to settle a comfortable balance of values in my head. Those purely objective static parameters simply were not enough to catch the plethora of colours and shades that were playing inside those venues.

Little did I know that by the time I engaged in field observations for Providence Health, I was about to endure the urge to make use of some of my background assumptions, branded on me as a biological, social, political being. When I was starting this project I had a clear determination to lead my research towards social good, with a feasible, practical outcome, and even though it was still quite blurred in my mind, the scope and goal of this work made it very clear that I could not "pretend" I was devoid of any preconceptions when approaching my observations.

In order to get acquainted with BC's public health system, the province's administrative structure was assessed. I also aspired to have an immersive experience in a BC's nursing home, so when I approached Providence Health with the possibility of volunteering at their Youville Residence venue, besides being readily accepted, I was promptly offered the task of observing the elderly in the care facility's environment, a role which I immediately (and enthusiastically) accepted. The observations would take place in a couple of Providence Health's venues and were a significant feedback source from a major interventional project they had recently implemented in those sites. They provided me with a straightforward script, with parameters that were subjective in the values it expressed, but pretty objective in the way to recognize these benchmarks. By sorting and assigning score hierarchies to these sets of criteria, this script ended up designing predefined boundaries to the observation scope, thus considerably restricting the observer's freedom and yearning to use her/his personal points of view to interpret the acts and facts she/he sees.

After the first of a series of ethnographic observations, I realized that those places had a lot more to show and inspire than some simple categorized descriptions and occurrences.

The environment and the people within, as I would later find out, provided a surplus of signs and meanings that were completely overlooked by the prescribed preset of parameters. Signs that were "shouting" to be heard and witnessed, but were muted to me because of a restricted script of benchmarks that kept all my attention and focus within its boundaries.

It wasn't until a regular meeting with my supervisor that we recognized the wealth of information and signs that these settings were able to bear and inspire. Prominent or veiled, meanings of all sorts started to arise from my writings and expanded my memory up to the most subtle object, sound or act that I had witnessed in those venues. Events like a grumpy old lady searching – without much success – for a table to "dock" her wheelchair to. A caregiver that kindly talks to an elderly and is finally able to pluck a smile from his face. An old man happily exercising his arms, watching the main gym activity group from afar. The external assessment of the daily life of people – in this case, a group of seniors, caregivers and nurses in a residential care home – revealed what otherwise would be suppressed by a pragmatic procedure. It uncurtained all sorts of beauty, even if, potentially, they are poetical interpretations of the omnipresent decay.

The Interleaved Motion

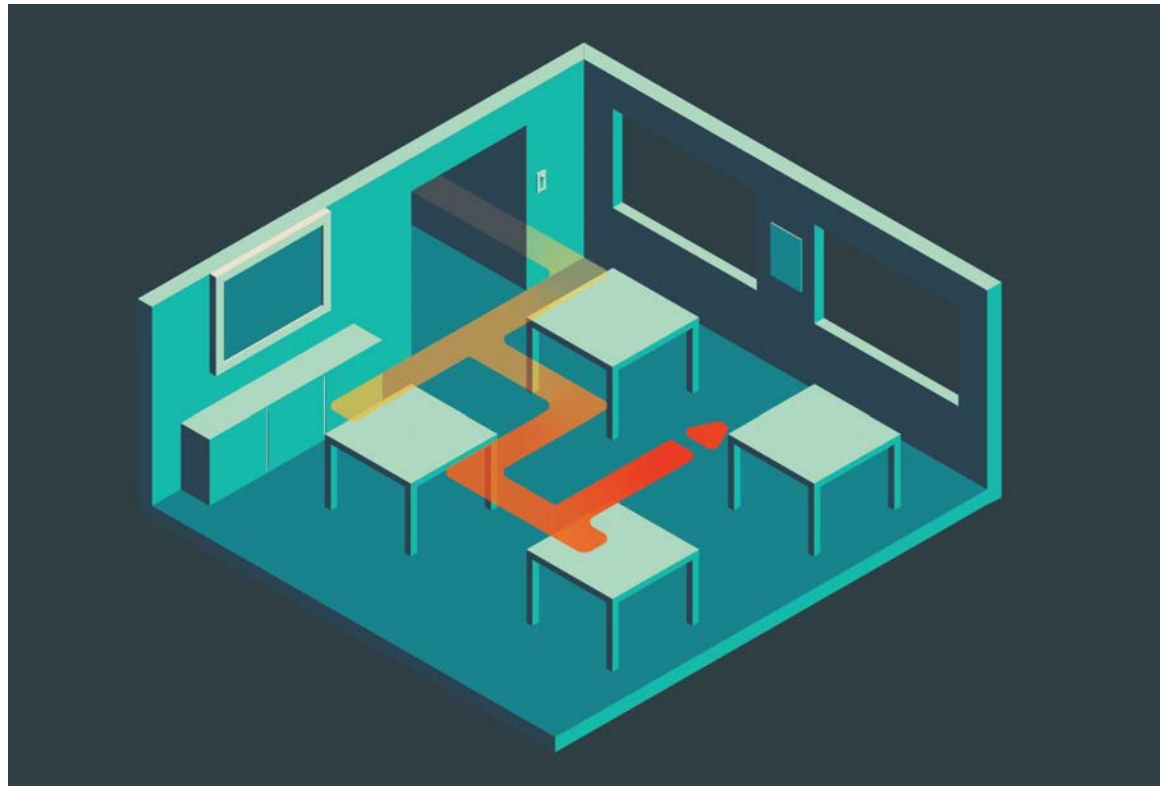


Fig. 4_Visual study of the motions observed within care homes

This significant (yet frugal) finding encouraged me to pursue deeper significance from what has been seen and, at a certain point, I was able to grasp a subtle but unchanging aspect of the day-to-day life in nursing homes. I realized that caregivers and nurses were always running busy throughout the main hall, in between tables and wheelchairs and the

elderly. It was a never-ending display of trajectories between objects and people, all static or close to being. Straight or winding, continuous or interspersed, the constant motion of the health professionals described much more than random patterns of paths; they were visual pieces of evidence of certain examples of interactions. From the trajectory and its continuity of motion, one can infer whether a caregiver was just doing her/his role, or if what motivated this movement was a cheerful chat with an elderly resident. Or if the professional was rushing to use the washroom, or if she/he was running to rejoin a storytelling activity with an old lady. For instance, if the path describes a straight (or almost straight) line across the room, even if among the elderly, it most certainly was devoid of any meaningful interaction with any resident. Or if it draws a winding and interleaved trajectory, chances are the health professional not only did her/his job task but went further and engaged with one or more residents on the way.

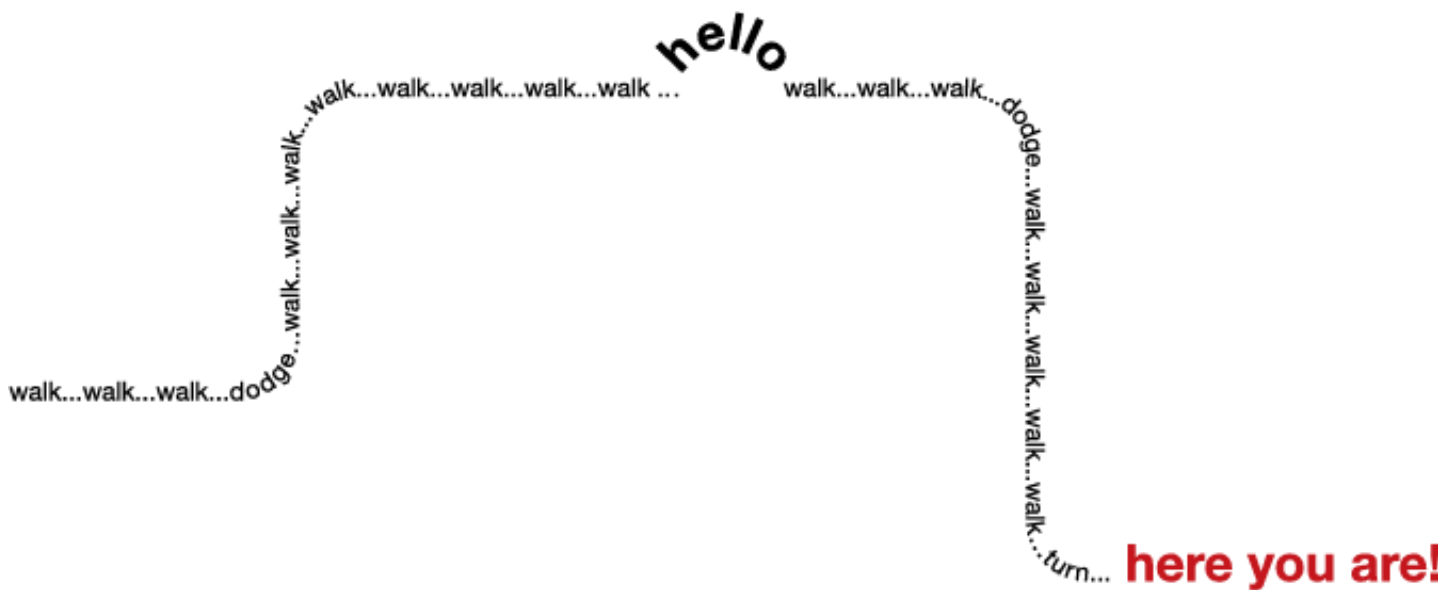
The paths that the caregivers (and other people as well) described along the room prompted me to create simple descriptive studies of the observed scenarios. The first reflection was essentially textual, with a narrative tone to it:

"A caregiver left the main office and headed straight to the dining room of the building, approaching the area by the left. She had to immediately dodge from a big long table that was positioned along the boundary of the site and she did it with a sharp turn to the left. After clearing the table, the caregiver described a straight line until she frontally met with an old woman seated by a square dining table. She knew her and stopped for a brief moment. After a short and cheerful conversation, she moved on past the elderly until she stumbled upon a utility cabinet, which forced her to make a sharp turn to the right and perform a straight line to her final destination: an old man who was completely unaware of the caregiver's approach and whose welcoming smile fully and gracefully overshadowed his somewhat surprised mien!"

My second attempt was to simplify this narrative by eliminating the elements that did not contribute to the full understanding of the trajectory described by the health professional:

"Departure. Entrance from the left. Left turn. Stop. Continue in a straight line. A sharp turn to the right. Continue straight. Stop at the final destination."

The third study was an attempt to incorporate the written narrative into a visual interpretation of the movements, like so:



DETAILED DESCRIPTION OF DESIGN RESPONSES/ACTS OF MAKING_

The pinball machine is a critical outcome of the observed motions and trajectories that caregivers described in the care homes and the playfulness that flourish in there. A joyful environment that is nourished by movement, characters and life wealth from a place where few people could think of as a repository of such uplifting spirits.

The machine engages these realities by critically confronting both our imagined reality about this life phase and the pre-conceptual aesthetics associated with care homes' settings. It builds a jaunty and stimulating discourse over the observed motion and trajectory notions apprehended from the real-life reality of residential care as well as subverts, not the actual aesthetics that can be observed in these venues, but the general notion we have about it.

As a critical design object, the pinball machine aims not only to undermine and subvert (Bardzell, 2013, p. 3299) the generalized concept of the end-of-life phase and how it is lived within the walls of a home care facility; it also confronts the status quo perception of aesthetics (Bardzell, 2013, p. 3302) regarding these venues by adopting "insurgent" approaches like the pop culture iconography of the 1980s to facilitate aesthetic engagement by fostering sensibility and perceptual acuity.

The phenomenon of the interleaved motions described above inspired the immediate creation of a real pinball machine that could be used as a sort of a "blank canvas" that would allow for a series of critical design explorations around the subject, so I went ahead and built a scale version ($\frac{1}{4}$) of a semi-functional pinball machine.

The Prototype Build

I started the build process with online research of the real pinball machines in the Fall of 2019. I tried to get acquainted with the overall world of pinball gaming: visuality, iconography, material attributes, components etc. As it would be a simplified model, I concentrated on the physical traits of the device, such as its main dimensions, the (all-important) angles, and mechanisms.

Since the mockup would be a scale model of the original machine, I anticipated it would consist of small components that would be a handful to deal with, so I decided to design the device using a CAD program, as it would provide me with a high level of accuracy and, most importantly, anticipate important build issues that I could easily avoid before assembling the model. I used Autodesk Fusion 360 for this purpose and it proved to be an auspicious decision as it not only facilitated the design process itself but also made it extremely easy to export the final components for fabrication.

The parts were laser-cut out of 1/4" and 1/8" plywood. It was an effortless process and the components proved to be extremely accurate and faithful to the design, which made the assembly an uneventful process.

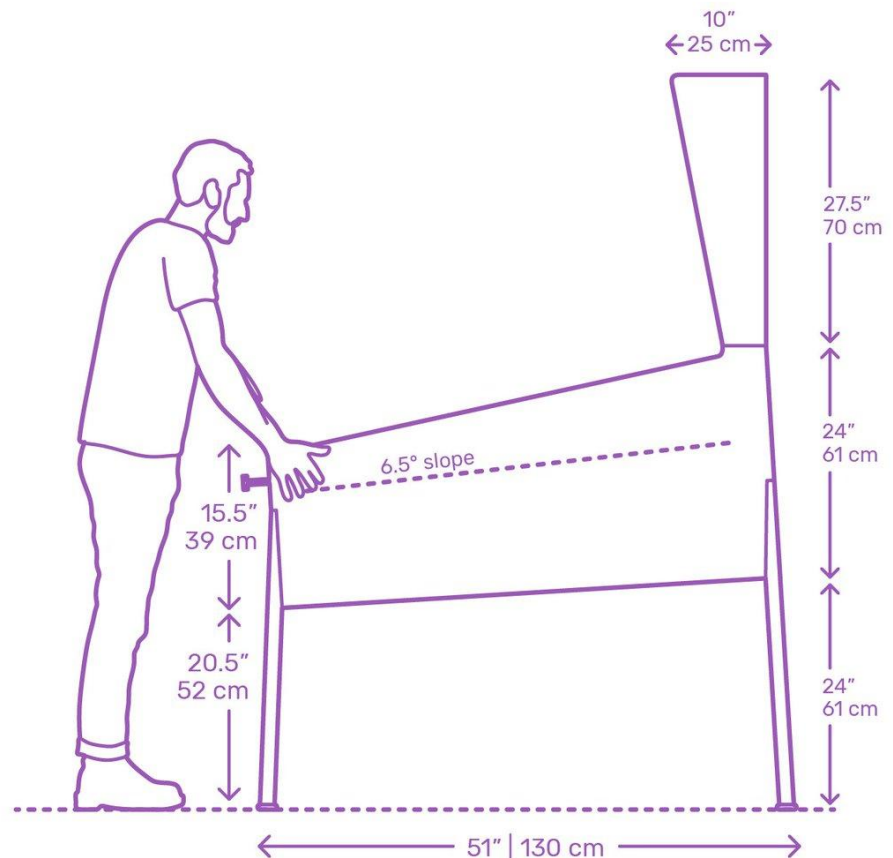
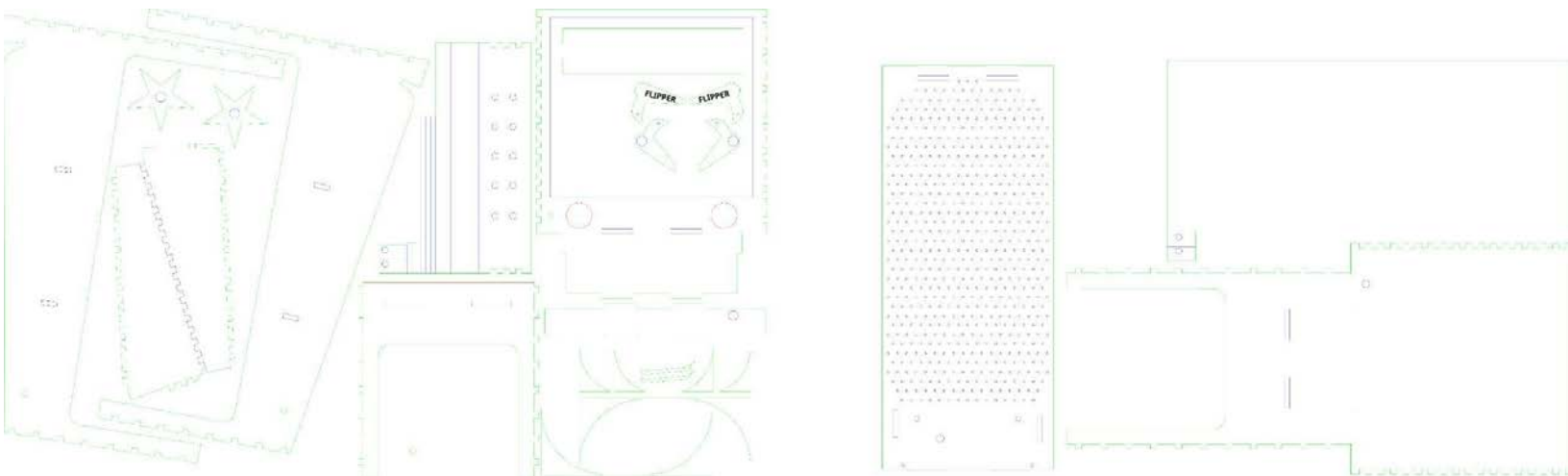


Fig. 5_ Overall dimensions of a usual pinball machine



Fig_6_ Vector drawings of the pinball machine parts ready to be laser cut from plywood



Fig_7_ Construction of a reduced scale pinball machine prototype

Simplified mechanisms that operate basically with springs and gravity were created and are well suited for exploratory iterations and critical analysis. I chose not to incorporate more advanced features such as strobe lights, sensors and scoring mechanisms because of the level of complexity they demand and the timeframe this project should take. Also,

such features wouldn't add more academic interest to the scope that this machine was primarily intended to perform, which is a speculative, discursive design interpretation stemming from a critical observation.

In this early iteration, I was keen to create an immediate semantic link with my topic of the research: life within the boundaries of a care home. I started by designing the backlight display with a digital collage of three seniors' portraits. I incorporated typical 1980's arcade-inspired icons and symbols. The image depicted three seniors in healthy, joyful poses surrounding a health professional with a kind of enigmatic smile, staring at the camera.

By embracing an iconography that clearly pertains to the medical/care homes domain, I adopted an objective approach to interpreting what I observed in the field, thus creating a straightforward semantic layer. The other layer consisted of a critical assessment of the whole pinball scenario (visuals, mood, symbols). This particular universe immediately reminded me of my childhood in the 1980s when I not only used to spend some of my afternoons in video game arcades but also watch Hollywood movies with memorable pinball scenes. This somewhat nostalgic visual memory made me choose these 1980s visuals and adopt a more critical layer of creation and mingle its elements (saturated colours, cliché typography, gradient colour stripes etc) with the previous layer to create the final piece.

The Responses of Others



Fig 8_ Illustration for the pinball machine's backlight. Critical interpretation of the Youville Residential Care setting

Soon after I had produced this initial mockup pinball machine I had the opportunity to share it during studio critique with peers. The feedback I received was a mix of surprise (given the explicit contrast between the social function of the object and the premise of the topic) and wonder, in part because of the object itself (complexity, functionality, accuracy etc), and also because of the craftsmanship it might have demanded to construct it. The relation of this recreational, toyish device to the social engagements observed in a care facility was not immediately apprehended by the peers, but a quite lean argument was enough to create this semiotic link between the concepts. The "matching" purposes of both realms are reasonably clear and a shared understanding was readily achieved.

To my surprise and delight, the object and the critical correlation that was unveiled by the research raised a number of consistent inquiries about the project and its subjective critical turn and insightful outlines for the following experimentations, such as building a full-scale machine in order to provoke both overwhelmingness by the size *per se* and also to explore the body's positioning and movements over the pinball machine. Another inspiring approach was in regard to the scoring system and reward granting, once this is the main guiding premise that "unites" these once contradictory worlds.

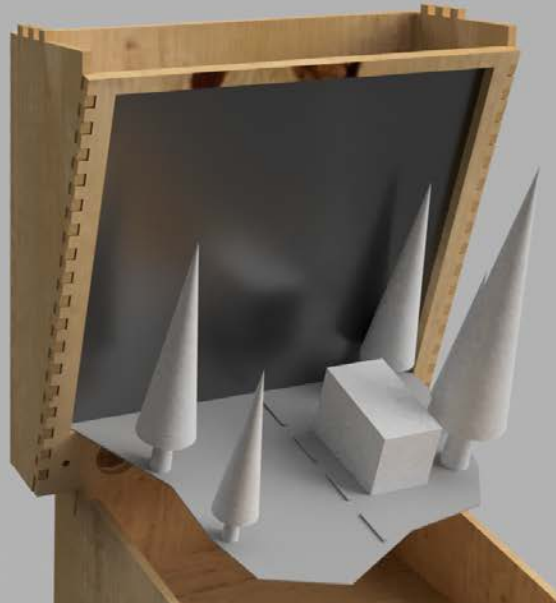
Refining the Pinball Machine

My elected analogy between the constant and shifting movements of nurses/caregivers and the bumpy, unpredictable trajectories of a steel marble in a pinball machine is a playful metaphor of the most prominent action that takes place in an assisted living environment, such as the swarm of professionals I and relatives) around the care home assisting in many ways the elderly residents and the whole exciting atmosphere that rises from it. As a Designer, I appropriated the real-world scenarios and translated these to an unexpected gaming machine. Doing so, I was able to visually and physically translate the most basic features of the day-to-day operations in a residential care home that I observed.

I soon realized that while the pinball machine analogy succeeded in translating the fundamental mechanics of patient actions displayed within a care home, it failed to display the amplitude and diversity of characters, backgrounds, and lives that steadily fade within its walls. The individual, the elderly human being, for me, was fundamental to my work if I could somehow make the pinball machines accommodate and reflect their vast and assorted traits, countless versions and statements could be raised and endlessly varied outcomes could be yielded.

Real-world pinball machines are big, bright and loud devices, but at their core, they are purely thematic allegorical machines that rely on the thematic visual elements to differentiate amongst a plethora of other pinball machines that work in and are played in almost an identical way. Since the nature of the game is almost entirely the same in every machine and gravity plays the same role in all of them, efforts to distinguish one from another rely almost exclusively on the thematic art on the backbox, backlight, cabinet, game board and sound effects. I realized that by customizing my project's pinball machines, I might be able to promote engagement, provide a kit for others to engage with. I set about creating and planning this assembly of building materials, tools and extra add ons (individually, personalized visual accoutrements).

Add-on Kits



Fig_9_3D render of an add-on kit attached to a reduced scale pinball machine

I envisaged that each of my pinball machines could be equipped with individualized visual content on top of the gaming board. In my mind, these add-on pieces might act to translate care home residents' expression of their own memories – ideally acting as a device to raise and revisit meaningful innermost emotions.



Fig_10_Realistic add-on kit build with foam boards



Fig_11_Model shed and truck on a realistic add-on kit



Fig_12_Realistic add-on kit build process

These "addons" can be provided to the residents and their families (or caregivers) in the form of a kit comprising different materials and tools. These contents are the result of a previous screening stage meant to enhance acquaintance with the resident's personality, strengths and limitations and reveal hints of potential outcomes for the kit.

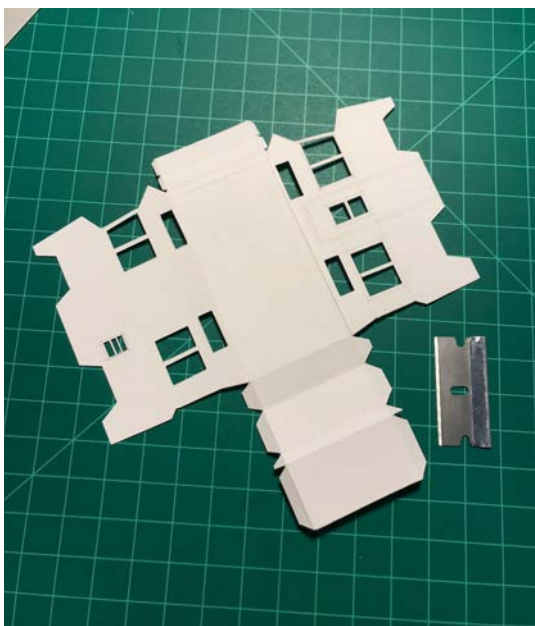
Depending on the individual capabilities of the residents, the building kit can present distinct levels of complexity so that it can promote more engagement and joy for the parties involved. Relying not only on the construction process itself, the activity can further provide the elderly with deeper interaction with relatives and caregivers, thus nurturing fertile ground for the emergence of memories and pleasurable moments of life. These memories are the central premises that will help set up the inspirational backing and framework of the build.



Fig_13_Finished realistic landscape add-on kit



Fig_14_Detail picture



Fig_15_Paper cutting for the second add-on kit



Fig_16_Finished paper add-on kit



A LUDIC DIALOGICAL OBJECT_

I envisaged the pinball machine as a dialogical object with the capacity to enable and instill a critical approach to the field of my investigation (the care home) I created it as a design research tool – a means to help me source through the situation and prompt, more than anything, further questioning. As I shared it with others I was able to see it also function as a facilitator that favours conversation, an enlightening dialogue that can only benefit the ones within its context.

The pinball machine is a gaming device *per se*. It is a self-contained piece of equipment that integrates the medium and the game itself. An individual game in which the player has to beat not another player, but simple physics. An adversary that will naturally guide the metal sphere through the fastest, linear and straightforward trajectory out of the gaming stage. The player will have to inevitably halt this movement and flip back the ball in a trajectory that, ideally, will do just the opposite: hit and bounce back on the most "obstacles", creating the most irregular paths in order to score more points.

The former paragraph roughly summarizes the core dynamics of the game, which is essentially performed by one single player and no "living" opponent to be beaten other than her/himself. But when we contextualize (residential care homes) our pinball machine within the realm it was idealized, it surpasses its ludic perspective and becomes a critical design object. As a critical design object, it fosters dialogues that can reach interpretations far beyond the game it is clearly associated with. The interleaved movements phenomenon that I'd previously observed and the playful visuality of the machine, direct results of the critical approach to the context of the study, should have enough significance to leverage dialogues regarding care homes settings. Hence it's safe to state that the pinball machine displays clear traces of Dialogical Logic – an approach to logic in which an assertion is confronted by an opponent that challenges its validity in an argumentative form (Piecha), – allowing for assertions and responses in a dialectical structure.

Here, the dialectic follows the attack and defence sequence and will always result in a winner (if an assertion has a winning proponent strategy for it). In the case of my version of the pinball machine, the intent is to have neither a winner nor a loser. The dialogue happens on the propositional territory as the game is played or considered. The resulting iterative conversation has, I think, the possibility to lead to less explicit but arguably deeper social comprehension, improved awareness. It certainly provides a site for people to review assumptions, education or even more (and sharper) questioning.

A FINAL NOTE_

This project has taken on a different strategy to a complex issue. It endeavoured to find feasible and dependable means to interpret and assess important features that are inevitably overlooked or misunderstood by society in terms of the collective imaginary around residential care and the end-of-life period experienced in these venues. I believed that a humble but revealing social phenomenon within the facilities of a public care home could become a relevant proposition for a critical analysis. An interpretation that would lead to a metaphorical analogy that would result in an object as unexpected as it is suited to foster dialogue and debate around the care homes' context: a pinball machine.

GLOSSARY OF TERMS

Dialectic_

Any formal system of reasoning that arrives at "a truth" by the exchange of logical arguments.

Dialogical_

Related to or having the character of dialogue.

Dialogical Logic_

Systematic study of dialogues in which two parties exchange arguments over a central claim.

Ethnography_

A type of qualitative research that involves immersing yourself in a particular community or organization to observe their behaviour and interactions up close.

Hermeneutics_

The study of the methodological principles of interpretation.

Iconography_

The traditional or conventional images or symbols associated with a subject.

Social Function_

Any consequence of social structures that positively affect society and impacts structural continuity.

Sui generis_

A Latin phrase that means "of its/his/her/their own kind, in a class by itself".

Teleological_

A reason or explanation for something as a function of its end, purpose, or goal, as opposed to as a function of its cause.

LIST OF FIGURES

- 1_ Interpretation of ethnographic observations at the Youville Residential Care setting
- 2_ Illustration for the pinball machine's backlight. Critical interpretation of the Youville Residential Care setting
- 3_ Doing volunteer work and an elder closely watching
- 4_ Visual study of the motions observed within care homes
- 5_ Overall dimensions of an usual pinball machine
- 6_ Vector drawings of the pinball machine parts ready to be laser cut from plywood
- 7_ Construction of a reduced scale pinball machine prototype
- 8_ Illustration for the pinball machine's backlight. Critical interpretation of the Youville Residential Care setting
- 9_ 3D render of an add-on kit attached to a reduced scale pinball machine
- 10_ Construction of scenery terrain with expanded foam for a realistic add-on kit
- 11_ Detail of a model shed and truck on a realistic add-on kit
- 12_ Semi-finished realistic landscape add-on kit
- 13_ Finished realistic landscape add-on kit
- 14_ Detail picture
- 15_ Paper cutting for the second add-on kit
- 16_ Finished paper add-on kit

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