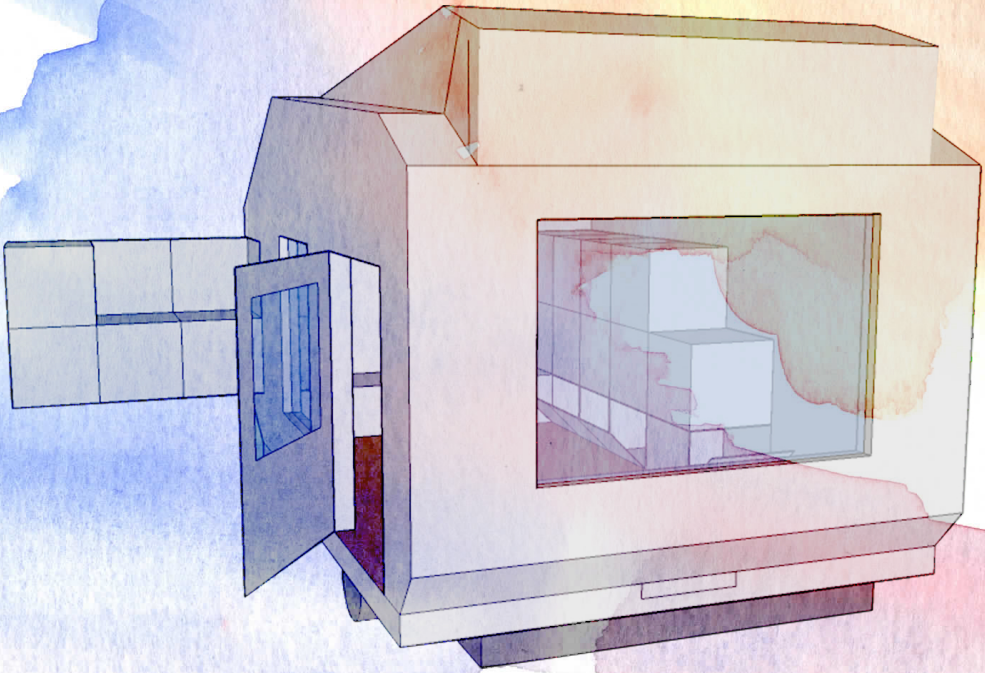


Mobility & the Investigation of Self-Reliance

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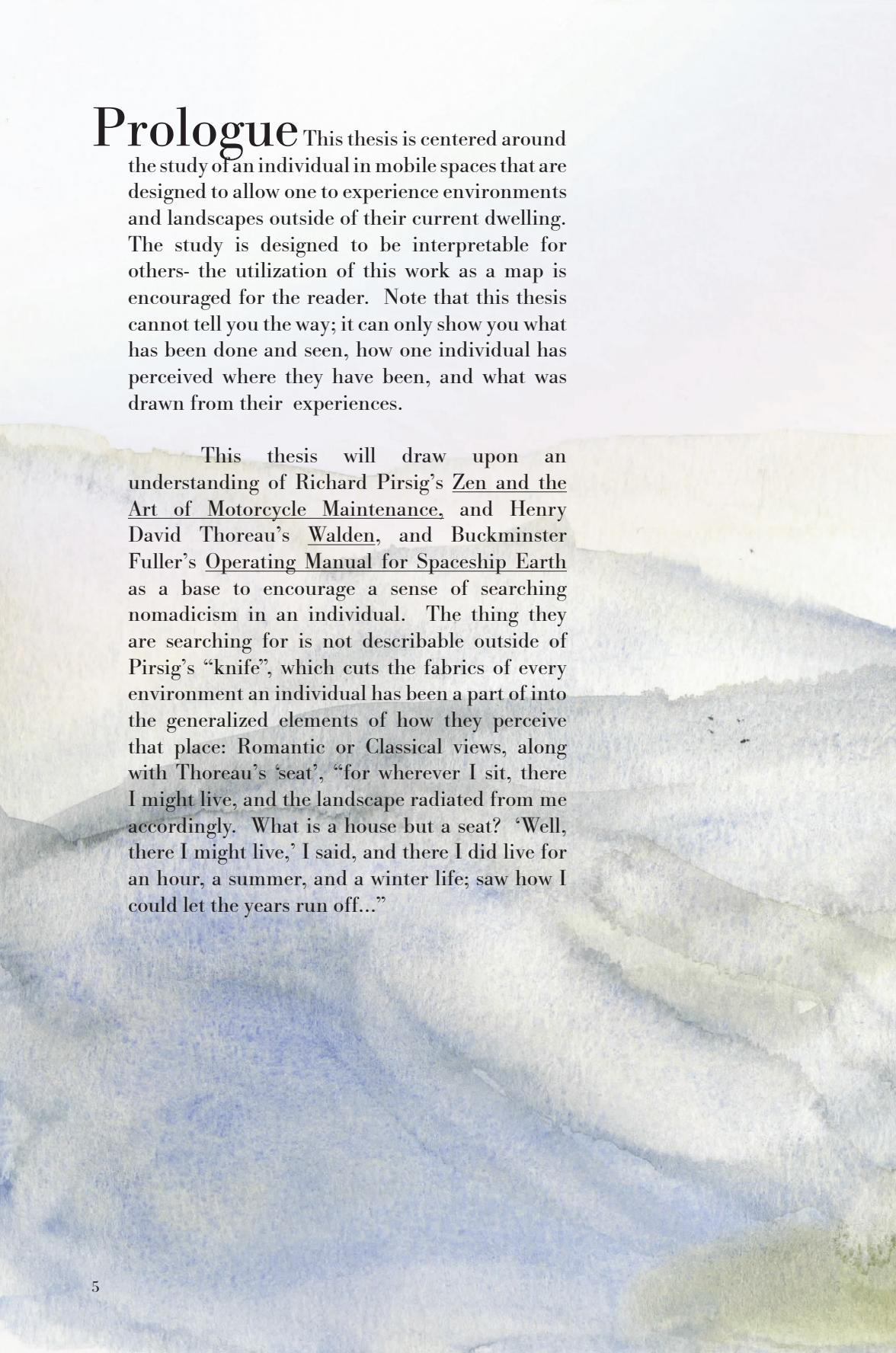
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Prologue

This thesis is centered around the study of an individual in mobile spaces that are designed to allow one to experience environments and landscapes outside of their current dwelling. The study is designed to be interpretable for others- the utilization of this work as a map is encouraged for the reader. Note that this thesis cannot tell you the way; it can only show you what has been done and seen, how one individual has perceived where they have been, and what was drawn from their experiences.

This thesis will draw upon an understanding of Richard Pirsig's Zen and the Art of Motorcycle Maintenance, and Henry David Thoreau's Walden, and Buckminster Fuller's Operating Manual for Spaceship Earth as a base to encourage a sense of searching nomadicism in an individual. The thing they are searching for is not describable outside of Pirsig's "knife", which cuts the fabrics of every environment an individual has been a part of into the generalized elements of how they perceive that place: Romantic or Classical views, along with Thoreau's 'seat', "for wherever I sit, there I might live, and the landscape radiated from me accordingly. What is a house but a seat? 'Well, there I might live,' I said, and there I did live for an hour, a summer, and a winter life; saw how I could let the years run off..."

How will a designed mobile apparatus allow individuals to understand their architectural environments through the discovery and documentation of their knife from the living space of their seat?

Does this nomadic sacrament teach a higher understanding of the millions of things around us that we are aware of, but not really conscious of?

Pirsig's Zen Zen and the Art of

Motorcycle Maintenance contains the self-study of an individual, along with his 11-year old son, traveling to Montana- a trip that, the narrator establishes, requires a high sense of awareness throughout the journey. By their method of transportation, he is not simply sitting and watching at the world goes by, but rather he is in the scene. The heat of the sun visibly radiates off the paved road, interacting with his senses of feel, as it warms his body, sight, as the edge of the horizon wavers- toying with his eyes, and smell, for every breath he takes has the slight singed smell of the asphalt below him as he makes his way through this environment. He is part of his environment, and it is a part of him as well, for as he moves, as he feels, and as he breathes in the landscape, his mind considers this and that, "these changing shapes, these burning hills- we are always aware of them, but not really conscious of them unless there is something unusual or unless they reflect something we are predisposed to see,"⁽¹⁾ for as humans we could never even possibly be conscious of all these things and remember all of them, for one's mind would become so filled with useless crumbs of information that one would be unable to think or function. And so "from all this awareness we must select. What we select we call consciousness, and this is then different from awareness because the process of selection mutates it. We take a handful of sand from the endless landscape of awareness around us, and call that handful of sand the world."⁽¹⁾ This brings rise to questions that, in order to fully understand the narrator's chautauqua, his self-discussion regarding the physical, metaphysical, and spiritual aspects of his journey. What is this thing that determines how this process of selection will act? How can it be influenced to remember an environment as its creator intended? Where do I find this knife that separates the classical of reason and laws from the romantic of inspiration and creativity? Consider the knife's hilt found, but not complete- it is you!

“What does architecture amount to in the experience of the mass of men? I never in all my walks came across a man engaged in so simple and natural an occupation as building his house. We belong to the community.”
-Henry David Thoreau

Note you are unable to let it go, nor will you be able to put it down, for your emotions, memories, actions and inactions, your being- you are what defines and shapes the hilt of your knife. It is a part of who you are, but not the whole. If all that man needed was his own being in order to know himself, to know who he is, he would not be a part of a species. There are those that may choose to live in solitude, yes, but there is still an urge to have the influence of others, of culture, and without experience of this we do not know what it may bring, good or bad, and so we explore it. We find it to be harsh, cruel, loving, full of things we would not ever know were it not for connecting to society.

These other people, however, are not the missing blade. The missing blade is out there, in the individual environments, sociological and architectural, that our world is composed of, and must be collected, shattered bit by shattered bit, to build the blade to be fastened to your hilt. The search throughout environments outside of one's dwelling is a journey of both the body and mind, for how else will we learn how our emotions and memory work without discovering it ourselves? How else are we to find self-enlightenment without scouring our worlds and our minds in lust of it ourselves?

Through the utilization of his chautauqua, Pirsig is able to decipher and come to terms with things within himself, most notably his past self. He able to accept that he is the man he calls Phaedrus, someone who had sacrificed everything in his world to the classical knife, which cut away and sorted everything in its exterior romantic beauty into scientific piles, distilling the creative and artistic world around him into law, and bringing order to chaos. There was no longer any “good” or “bad”, for there was no value to judgment: even the observer had been categorized as an unnecessary thing! Be conscious of the knife's blade, for to wield it holds the possibility of eliminating everything romantic about your world.

Mobilize Walden^{Henry David}

Thoreau's Walden embodies his experiences over the course of two years, two months, and two days of his creating and dwelling in a cabin he built in the woods. Throughout his stay, he maintained a journal of events, which he later developed in the novel as it is known today. "I went to the woods because I wished to live deliberately, to front only the essential facts of life, and see if I could not learn what it had to teach, and not, when I came to die, discover that I had not lived."

Thoreau had hoped that through his time living in the woods he could analyze his environment and himself, and that by doing so he would come to some higher objective understanding of society. He did not plan nor wish to live in solitude as a result of this; he hoped simply to spend his time there undistracted as he studied his environment, himself included, from afar. "To live so sturdily and Spartan-like as to put to rout all that was not life, to cut a broad swath and shave close, to drive life into a corner, and reduce it to its lowest terms."

He had done this for his own drive toward understanding, toward his own knowledge of himself, and to define his own *necessaries of life*: Food, Shelter, Clothing, and Fuel, "for not till we have secured these are we prepared to entertain the true problems of life with freedom and a prospect of success," but there are in fact necessary tools he defines as ranking next to necessities: a knife, an axe, a spade, a wheelbarrow, a lamp, and stationery. "If one designs to construct a dwelling-house, consider first how slight a shelter is absolutely necessary... Most men appear never to have considered what a house is, and are actually though needlessly poor all their lives because they think that they must have such a one as their neighbors have."

And thus, after building his cabin for a meager \$28.12 ¹/₂, he began his dwelling, observation, and critique. As he himself has built himself an apparatus of documentation and

critique, it is only natural for Thoreau, within his current experience thus far, to critique others of that which he has built himself: the societal opinion of what is required of a space for living, and where it might be. It may be as simplistic as a tool-chest, cut with holes, but it maybe still become a place of living for oneself, for what is a house but a place to stay until it is outgrown, by ourselves or our furniture, and retired then from its previous assignment as ‘home?’ I tell you it is a false sense of value by this society that our furniture is necessary to us, for where else are we so display our success? Is not the scale of the farmer’s barn society’s basis for determining his value in the community?

It is something implanted within us that Thoreau has counteracted for himself by being separate from that community as much as necessary, as he poses his questioning of why students are taught to integrate themselves into society, jumping past the necessary process of developing themselves as an individual before setting about influencing the community- “How could youths better learn to live than by at once trying the experiment of living?” Students should not play at living, for it is not the reality nor meets the *necessaries of life*, and thus inspires a standard of living in its lieu. We cannot merely study it either, for while the community will support students in this, it must be lived with earnest as well.

It is through constantly refining the process of contemplating the self, dwelling, and the environments that hold these things that we will come to understand what exactly our *necessaries of life* are, they cannot be told for even their organization within a tool-chest holds a hierarchy which differs from one person to the next.

Thoreau had picked the location of his dwelling with much purpose, and only after careful consideration, for wherever he went, wherever he stopped for a moment, he would depict the scene in his mind of what a home might look like in that place.

Within his own respects, Thoreau is indeed a rich man, for he has considered the greatest aspects of his surroundings, and having come to being familiar with each tree, he has considered even the future inhabitants of his surroundings. He has laid out a plan in his mind of which trees should be left to stand, with considerations of the perspectives he had viewed them from, and where his future neighbors might lay down an orchard, a wood-lot, or pasture, should they contemplate the land as he had.

In further reference to living and the house, Thoreau says, "At a certain season of our life we are accustomed to consider every spot as the possible site of a house. I have thus surveyed the country on every side within a dozen miles of where I live. Wherever I sat, there I might live, and the landscape radiated from me accordingly. What is a house but a seat? Well, there I might live, and there I did live, for an hour, a summer and a winter life, saw how I could let the years run off, buffet the winter though, and see the spring come in." If indeed a house is not but a seat, and a man can carry his bag of *necessaries of life* on his back, why would man not do this, so as to consider their house in every potential landscape, to find their permanent place once their feet are too weary to move any further, and they are content with the place they have found? Do the *necessaries of life* change while in this mobile seat of dwelling?

It is indeed a shame Thoreau was unable to test his experiences against the elements of now, for while his simple living is still possible, would the Thoreau of now still build himself his cabin in the woods? Would he still wish to radiate from a single focal point, or would it instead be imposed upon a bike, trailer, or van perhaps? He had marveled at the primitive man, who had the advantage of the very simplicity and nakedness of finding his *necessaries of life*. "When he was refreshed with food and sleep, he contemplated his journey again. He dwelt in a tent in this world,

and was either threading the valleys, or crossing the plains, or climbing the mountain-tops.” But the ideals of the *necessaries of life* has shifted into what even society now calls “standards of living.” What were once considered requirements are no longer those, they are expectations of society implanted into the mind of an individual. Men have become the tools of their tools, and so before we can consider the adoration of a house with beautiful furniture and ornamentation, the walls must be stripped, the construction exposed, before any knowingly real progress can be made with sound mind, much like ourselves. If the walls were left covered and papered, our own ideas and potential to grow with that place would become lost, for we would become mere housekeepers. Likewise, we should strip ourselves down to the bare body, and consider from there what must be added in order to live, so that a taste for the beautiful will be cultivated from ourselves, instead of from things foreign to us.

This moment is one where the discussions of Walden intersect those of Zen and the Art of Motorcycle Maintenance, in that they have a common belief that one must shrug off their preconceived notions of what this way of minimal living requires. This is not “minimalist” as commonly referred to as a way of living that reduces down living to as little as possible, but rather one that builds up one’s surroundings to what is necessary. It is at this intersection as well that Thoreau and Pirsig both suggest a sort of nomadicism, whether it be radiating from a single point of reference or the nomadicism in the form of mobility throughout the lifestyle. Either way, the apparatus must be well designed for the individual, for the components of their necessities, and, if deemed necessary during the designing, additional spaces for companions.

These things all hold effect in this thesis. This is a jumping point, not the only, one’s first plot-point on the thesis map, and may be referenced often in self-critique of what one has done with this map as a guide.

Fuller's Spaceship Earth

Buckminster Fuller, designer, futurist, environmentalist, foresaw the issues that the world would face after the Great Wars, and beyond that. He saw a lack of work for those who had once participated in war come home to no jobs, and a Great Depression. He was able to see the environmental repercussions of industrialization, and developed futuristic yet totally viable designs to combat both the world's economic struggles and environmental dangers. One of his many writings, Operating Manual for Spaceship Earth, synthesized his worldview, investigating some of the great challenges that he faced along with humanity, as well as principals that would guide us towards survival on this planet. Within it he discusses man's self-assertion that continued deepening of specialization is necessary of all people and the influences of why this is so, but also why this approach will not allow the human race to advance. From his Great Pirates to the influence of universities and figureheads Fuller pushes that "specialization is in fact only a fancy for of slavery wherein the 'expert' is fooled into accepting his slavery by making him feel that in return he is in a socially and culturally perfered position." As such, Fuller reinforces Thoreau's ideals of needing to be able to maintain self-reliance's general adaptability when one specializes. By 1946 the world was already back on its path towards armageddon, despite the end of World War II, when the autonomous computer was developed and thus the control specialist and physical producer of man began to come to a close.

It must be made clear here, however, that this thesis is about that human which is no longer required to hyper-specialize, but still clings to that ideal that progressing their knowledge in one single field of study will lead to some enlightenment, which is absurd when described in this way. "What nature needed man to be was adaptive in many if not any direction."

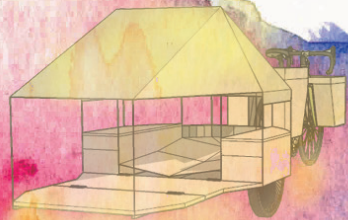
If it still comes as a shock outside of the title of Fuller's Operating Manual for Spaceship Earth, those who work with a wider worldview than others may see that while some may dream of being an astronaut, these lucky few are able to see that we are all astronauts aboard Spaceship Earth, and being astronauts is something that we have always been, while flying at sixty thousand miles an hour. Consider this experience. It does not affect many of our day-to-day rituals, but to those lucky few, Fuller's architects and planners, it influences their widened focus of those of other professions. While regarding those others, the planners must work to uphold their worldview, their spaceship's view, through knowledge of these other professions as well while working with them. It becomes a struggle for the planner, as he requires not the hyper-specialization of the people he fights for his view, but he must still know much of each of these professions, for the designer/planner is the one that acts with the comprehensive thinking for the whole of that group. It is at this point in our spaceship's travel that it is appropriate for us, the spaceship's scattered crew, to assume the role of planners and begin operating with the largest scale comprehensive thinking of which we are capable. It is through our travels of one onhundredth of the earth's surface in a lifetime that we expand both that fraction and what that expansion develops in our worldview, through our synergetics and dymaxion design. Identifying and problem solving before the problem arises, anticipating and calculating through our use of the computer, with the human inserted into the specialization process only where necessary so that there is no further unnecessary waste of our spaceship earth.

“We are too accepting of yesterday's fortuitous contrivings as the only means to solving a given problem... If nature required man to be a specialist, she would have made him so by having him born with one eye and a microscope attached to it.”

Progression of Mobility

“How could youths better learn to live than by at once trying the experiment of living?”

~Henry David Thoreau

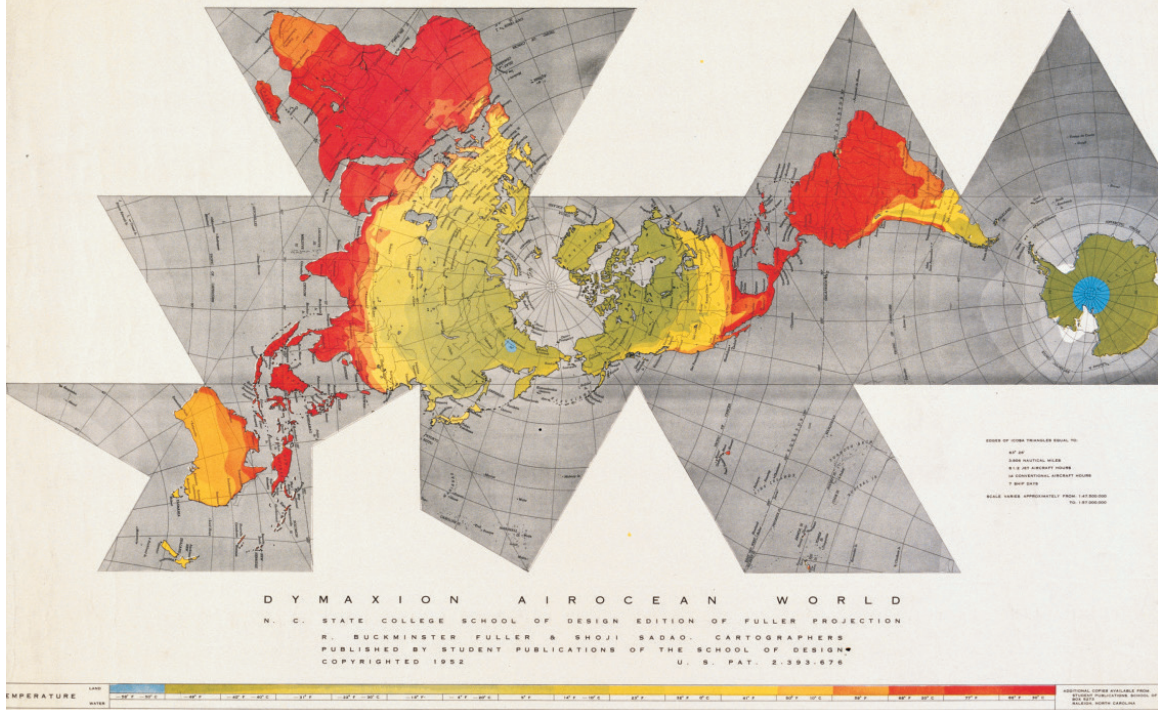


These are not the necessities of life for man, although they do meet the needs of Food, Shelter, Clothing & Fuel. This is to solve some of the problems of life, both theoretically and practically.

Part One

Introduction From within the dwelling to places we have traveled, there is a set of designed parameters that have dictated what we remember how we remember these environments, and how we re-present the information within our minds and to others after it has been filtered by those parameters.





Buckminster Fuller's Dymaxion Map of the world as a single island chain, eliminating hierarchy and bias of common maps. (3)

This understanding of the world is derived from Richard Pirsig's Zen and the Art of Motorcycle Maintenance, and his depiction of the "poor surgeon's knife", along with the character of Phaedrus, his previous self, who had attempted to organize the world down to every "grain of sand." He had established so many parameters in his attempt to classicalize his world that it had become de-romanticized- all beauty had been lost from it. Instead of looking to organize every last grain of sand, this study is a search for the surgeon's knife that dissected Pirsig's world, and discover the parameters of the individual's knife throughout his travels through landscapes.

Henry David Thoreau wrote, "Wherever I sit, there I might live, and the landscape radiates from me accordingly. What is a house but a seat? 'Well, there I might live,' I said, and there I did live for an hour, a summer, and a winter life; saw how I could let the years run off..." With this additional from Thoreau, it was determined that travel was indeed a necessary requirement of the thesis in order to successfully understand these elements, wherever it may take an individual to or from.

Case Study

With the intention to travel, the initial questions asked were “How far?” “What is the time frame?” “Will there be supply stops?” “What will you take with you?” These key questions are addressable by the individual alone, for this is, after all, their own private journey towards Zen, a journey towards the individual’s self-enlightenment. The individual may deem their journey to be a series of small excursions from their dwelling. Perhaps it is discovered that their journey requires these excursions from a larger apparatus designed to assist in the journey at a more macro scale. Either way, it is better to begin with a blank sheet of paper and a mind full of possibilities than to take the individual’s world as a whole and cram it into sacks, shelves, and zipper pockets.

This approach of building up from only the necessities in lieu of minimizing what one already has the potential of negating the question of “where can I put this thing I will maybe use once in the next 5 years?”

When it comes to packing light, an organization that embodies this as standard is the National Ski Patrol, a volunteer organization of trained first-aid first responders, which was developed by retired members of the US Army 10th Mountain Division in World War II- paratropped into the Alps armed with their weapon and a pair of skis and poles. Trained to work with limited supplies, the National Ski Patrol is focused on mountain rescue, assisting those in need in difficult to reach locations. Being able to help others in this environment requires both the ability to access those people safely and to consider the tools one will need or have access to while in the field. One cannot carry all the supplies in an ambulance without soon becoming a patient himself. Through the consideration of potential injuries the patroller may encounter, he loads his pack in preparation of these circumstances. It is a process every patroller goes about slightly different, despite their similar training, available supplies, and pack design.



◇◇◇◇National Ski Patroller, Boyne Mountain.

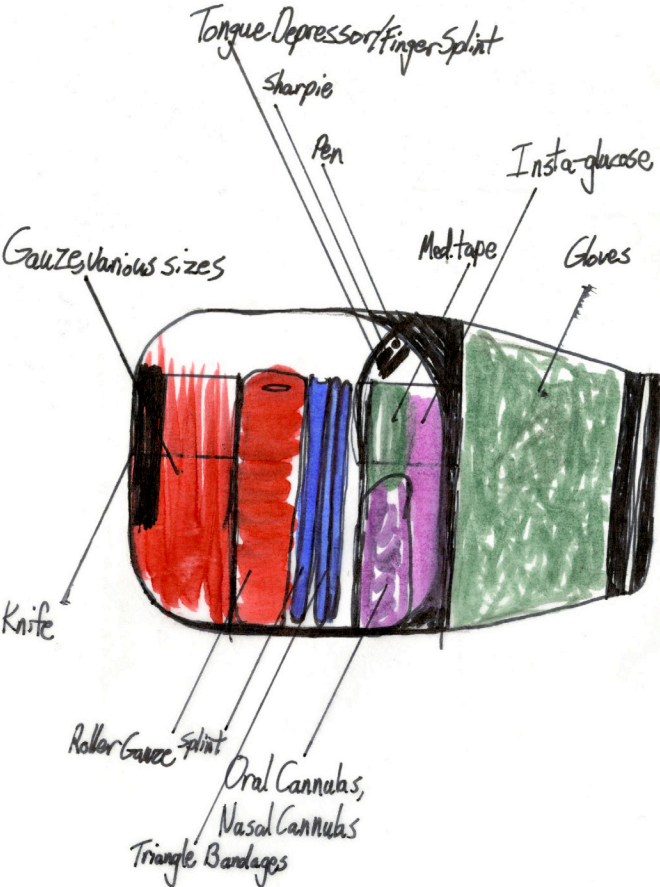
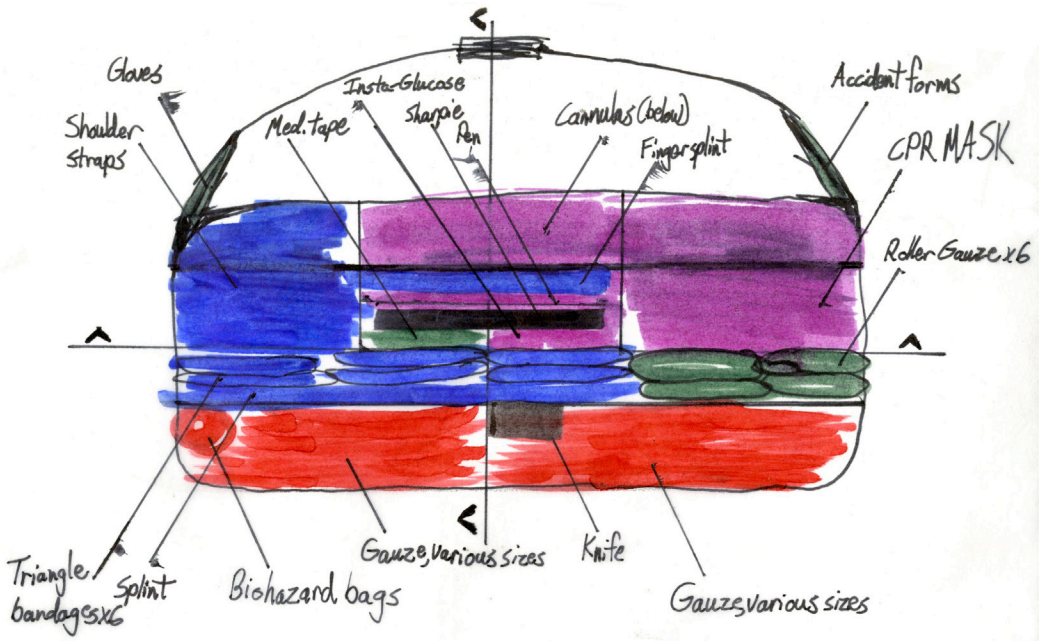


NSP Logo, National Ski Patrol (1)

◇◇◇◇Typical National Ski Patroller pack.



SP Pack, Tough Traveler (2)

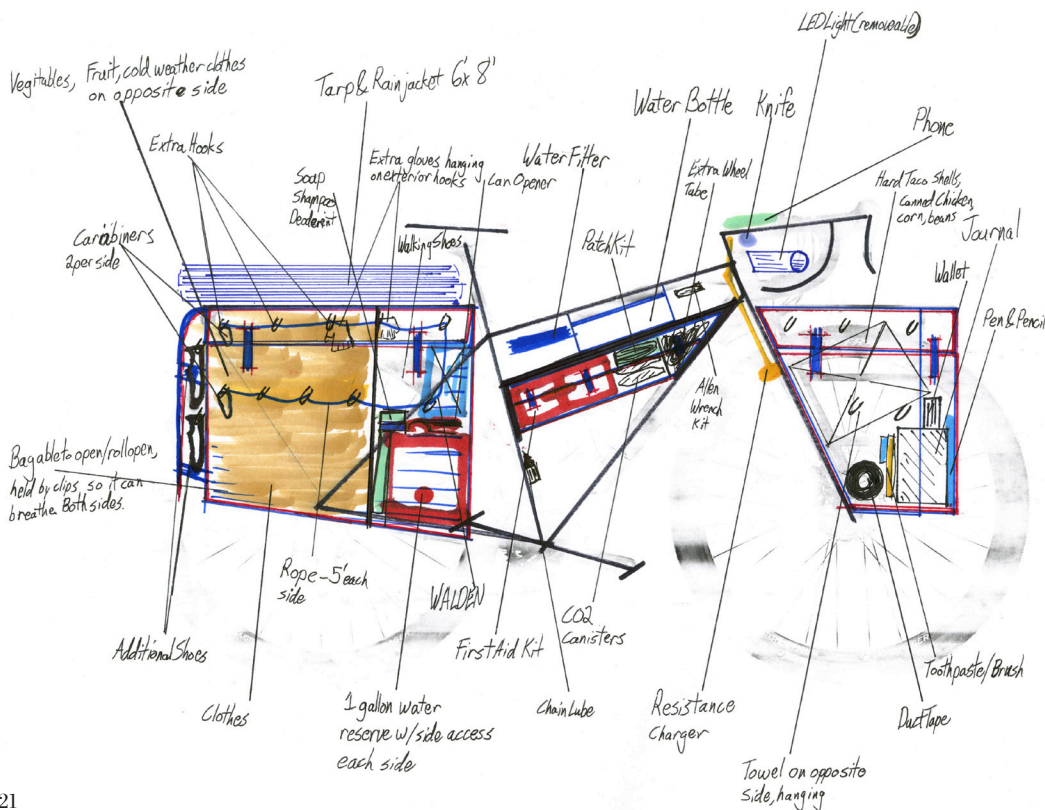


The patrolling pack shown here as a diagram displays an approach to designing for only what is deemed necessary by an individual. Every patroller may take the same pack and organize theirs slightly differently, some designing to operate though a day of skiing, while others may plan to resupply throughout the day. While they anticipate to have backup and additional supplies soon after arrival on the scene, sometimes help does not come as soon as hoped.

Apparatus: Bike

Both Richard Pirsig and Henry David Thoreau pushed for one to go out into the world in search of something, while keeping close to themselves something familiar throughout all the landscapes they may encounter. It is a reassuring thing they keep with them, something they express great love for, and serves as a reminder of what the individual is looking for in those environments. As a step up from the case study of the Patroller's Pack, a design to equip a town & country bicycle with the *necessaries of life* for a journey further than the pack's one day of first aid was developed by an individual for this pursuit. While the bike itself is a mass-produced thing, the customizations, design decisions, and experiences implanted into the bike by the individual who uses it defines how the bike is theirs.

◇◇◇◇ While Thoreau kept his journal of documentation, Pirsig read Walden to his son and held his self discussions, referred to as chautauquas.



Body

- 2 Shirts
- 2 Shorts
- 1 Rain jacket
- 1 Cold weather jacket
- 4 Pair socks
- 2 Underwear

- 1 Toothbrush
- 1 Toothpaste
- 1 Soap

Zen

- Journal
- Watercolors
- Brushes
- Pen
- Water bottle
- Water filter
- Walden

Company|Dog

- Food+scoop
- Water
- Squeaky tennis ball
- Avocado toy
- Leash
- Bed

Maintenance

- 1 First aid kit
- 2 CO2 canisters
- 1 Patch kit
- 1 Bike tube
- 1 Chain lube
- 1 Duct tape

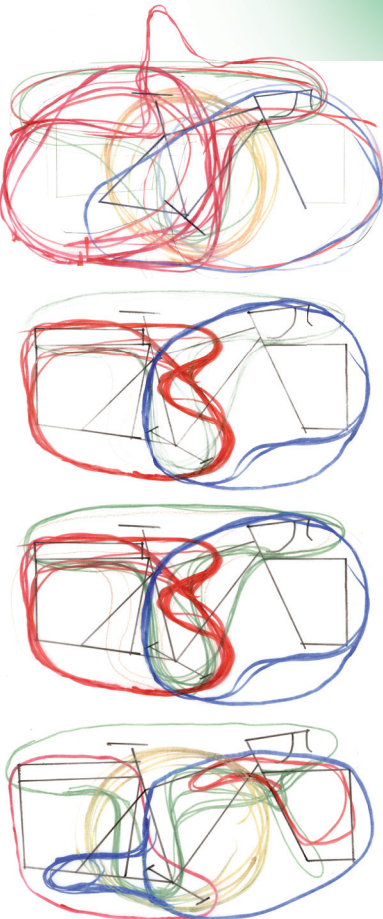
- 2 Pair biking shoes
- 1 Pair walking shoes
- 2 Pairs biking gloves
- 1 Helmet
- 1 Tarp 6'x8'

Location Samples

- 1 Multi tool (allen wrenches and knife)
- 1 Phone
- 1 Wallet

Connection

- 1 Bike phone charger
- 2 One gallon water jugs (reserve)
- 1 LED bike headlight
- 1 Rope 8' long
- 2 carabiners



In an effort to customize Thoreau's *necessaries of life* along with Pirsig's tools of finding zen in his chautauquas, the individual might create his own supply list, similar to above. It was not until after placing these items in the diagram (across, below) that there was a certain grouping pattern within the organization of the listed things in their relation to the bike. Shown (left and below), the refining of that organization, in reference by color: Red-Body, Blue-Maintenance, Green-Connection, and at the heart of it all, Tan-Zen.

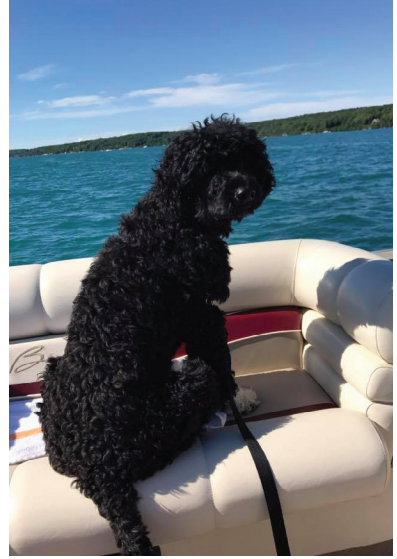


Apparatus: Bike Trailer

The trailer apparatus considers the potential of a companion, similar as to how Pirsig's 11-year old son joined him on his journey. In the thesis study of the individual, he concluded that he plans to take along his dog with him to find a common ground with Pirsig.

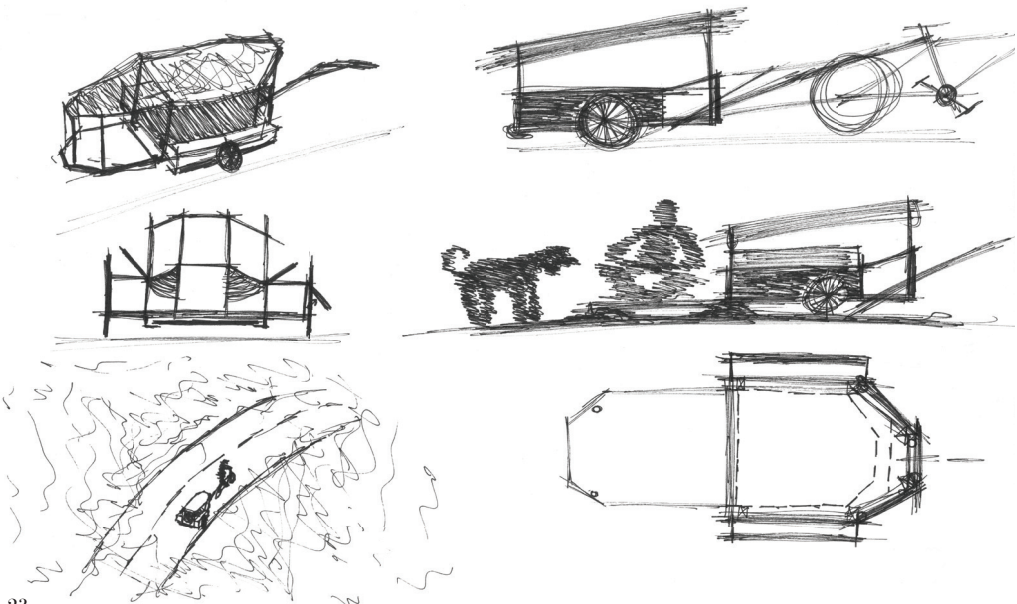
In addition to having the opportunity to bring along his traveling counterpart, the trailer grants the individual the opportunity to utilize it as Thoreau's seat for finding Pirsig's knife within the landscape. It is a mobile point of familiarity for the traveler deep in the thoughts and documentations that comprise his chautauquas.

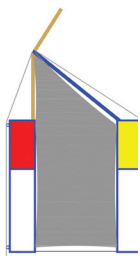
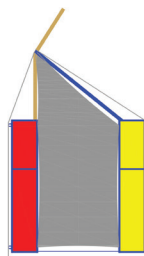
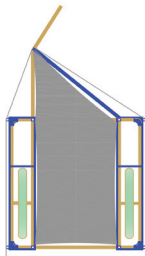
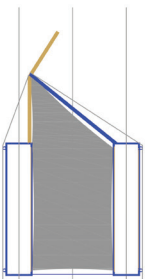
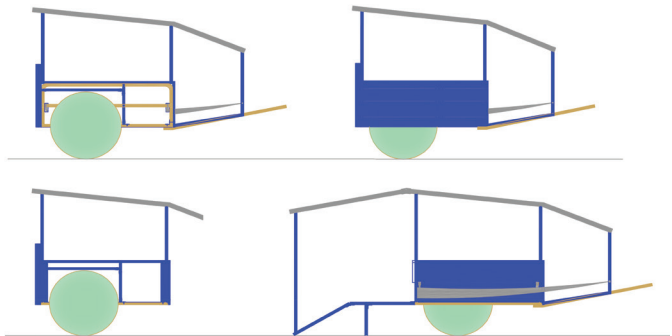
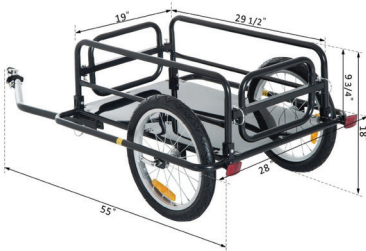
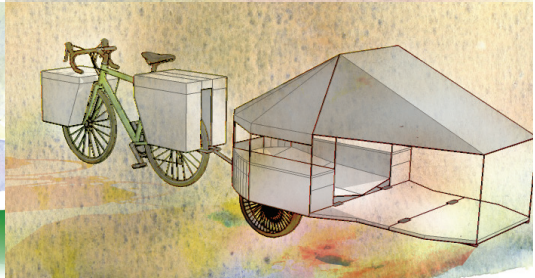
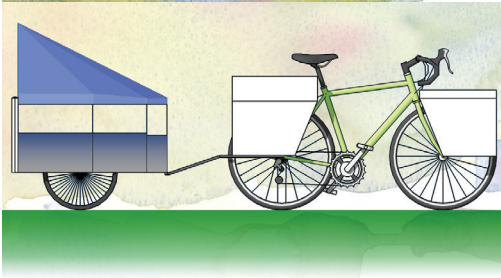
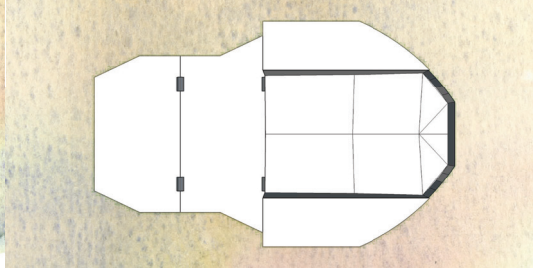
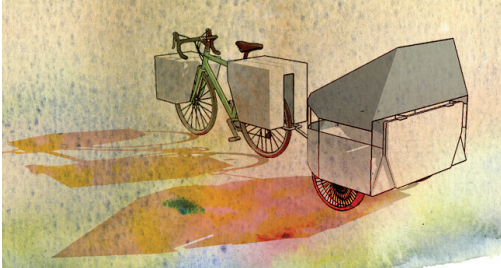
The trailer can be further described as a lodestone, as it is itself a sort of self-compass that assists in guiding the individual in their search for their knife from the vantage points of their seat. It allows the traveler to reach into the sand, to collect some in his hand, and ask Pirsig how this landscape is organized, how it will be sorted in his mind as he pedals away with his dog in tow, and wonder to himself as to how he will remember that five minute stop on the side of a road in the middle of somewhere.



◇◇◇◇The Dog- Murphy.

◇◇◇◇Pre-construction sketches of the trailer, dubbed "Lodestone."





An Apparatus

“You look at where you’re going and where you are,
and it never makes sense, but then you look back at
where you’ve been and a pattern begins to emerge.”

~Robert Pirsig



The act of self-reliance requires **Part Two**
acceptance of what one truly deems necessary.
What develops when this act is supported by a
community of these likeminded designers?

Analysis of Mobile Space

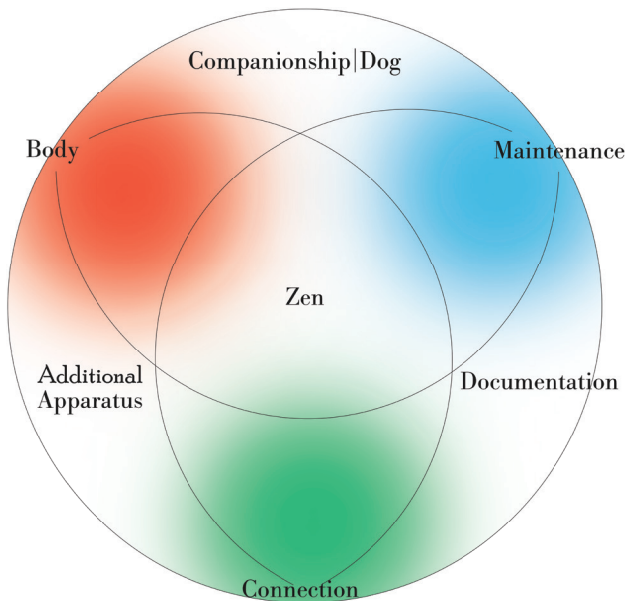
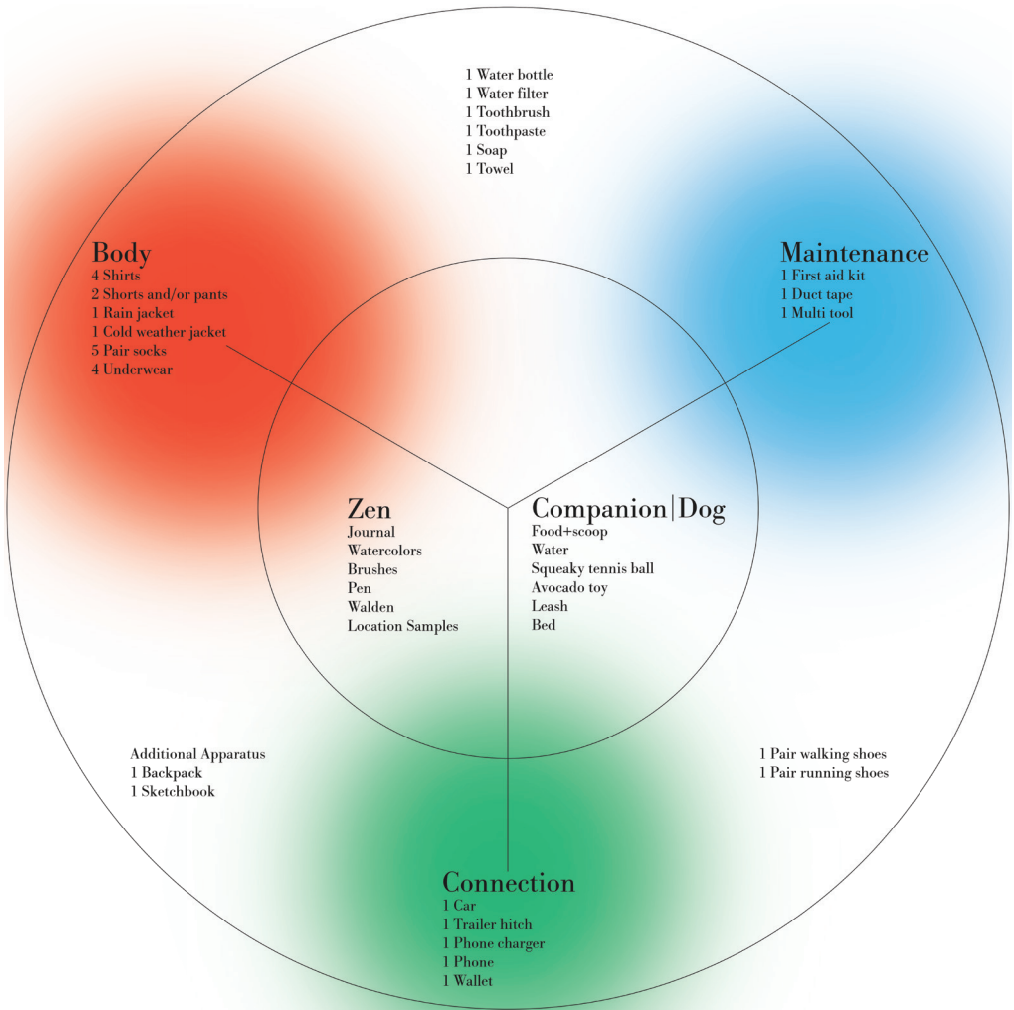
As the scale in which the journey and the proposed actions to be done throughout that journey grows, so too must the scale of the apparatus. The consistent things that tie this teaching tool to its predecessors aside from scale are not to be brushed aside either, for keeping some consistency throughout the scale of the apparatus would greatly exaggerate some aspects, which would then overshadow others.

There are multiple aspects to consider when analysing the potential base of the next step up in scale to that of the vehicle. As one key consideration, the question of whether this is only for a single individual's journey and search for influence, or is there a community which will allow individual members access to the apparatus in exchange for the discovery, collection, and documentation of the journey the apparatus is part of? Whether as a community or individual the choice still falls upon the one person, as the potential apparatus is still at that scale.

The diagrams organize some of the essential aspects of what one may need to preplan space for within the apparatus, broken into three interwoven overall concepts that are themes derived from Richard Pirsig's Zen and the Art of Motorcycle Maintenance: Body, Maintenance, and Connection, collectively working together to develop a fourth category, named Zen. From these main categories, there are subcategories of companionship, documentation, and additional apparatus, which may be attached to or contained within the main base apparatus, and may be accessed as simply as taking a sketchbook out while going for a hike or while completing some of the tasks to maintain one's self in the environments they encounter. Consider the context of places when planning these things, as they are as important to the design of the apparatus as the actions to take place in its presence.

◇◇◇◇Above: Ski Patroller, Boyne Mountain.

◇◇◇◇As examples of a list of essentials for an individual, the top diagram should consider alternative means and methods of design development if for a community of designers so as to accommodate the array of potential users. Also note that while companionship is not necessary, it is considered per the individual's choice of what to claim as a companion. Dogs are simply the best choice over any other alternative.



Analysis of Mobile Space

Trailer

Includes: Airstream Trailer, Custom Platform Builds, Teardrop Trailer

Can be left/placed in a location separate from the urban environment, and documentation may be removed from the trailer when one returns to their urban environment.

Can be designed to consider what is contained in the vehicle that tows or brings access to the location.

Vehicle can be used for storage for items that not need to be heated or cooled, or be readily accessible from within the trailer.

In most cases, this can easily be designed to act as a base camp, holding smaller apparatus, so that micro chautauqs can take place, via the bike apparatus.

Airstream Trailer
Large Living Compartment with large WWR.

Fabricated from pre-designed layout.

High overall cost/purchase point.

Typical Specs:

16'x7" (Basecamp)

16'x8" (Sport)

19'x8" (Flying Cloud)

27'x8'6" (Globetrotter)



(4)

Separated Driving Compartment

Includes: Pickup with Shell (utility or camper), Box Truck Rebuild.

Can be designed to camouflage into urban environment if necessary.

Driving cab can be used for storage for items that do not need to be heated or cooled, or be readily accessible from within the Living Compartment.

Driving cab may be heated/cooled separate from living compartment.

Documentation must stay within the apparatus until it returns to the urban context for refinement.

Pickup Truck with Shell
Living Compartment can have large WWR.

Can be custom built from truck's base frame.

Some camper shells can be removed from the base to create an immobile structure.

No thermal insulation in Living Compartment unless added.

Low ceiling height in Living Compartment unless using a camper shell instead of a cargo shell.

Typical Specs for camper shell:

Typical Specs for camper shell:

Total: 19'11" x 6'9" (without mirrors)

LC Dimensions: 8'x4'3" (@floor) 12'6" x 4'6" (@ceiling)

Base LC height+LC shell height: 21"+80"=101"



Integral Driving Compartment

Includes: Bus Rebuild, RV, Conversion Van

Can be designed to camouflage into urban environment if necessary.

Seats can be rotatable (for use while driving and while stationary for the Living Compartment)

Driving area is heated/cooled with the Living Space.

Documentation must stay within the apparatus until it returns to the urban context for its refinement.

Depending on specifications, it may be unable for vehicle to access some locations, climates, or may in general be difficult to drive.

Conversion Van
Passenger chair pivot for living space seating.

Living space can have enough headroom to stand.

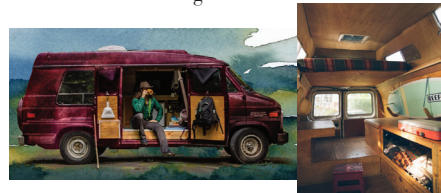
Many make/model variations allow high customization.

Typical Specs: 1994 Chevrolet Gladiator

Total: 17'x6'7" x 6'7"

Fuel Consumption: 17mpg

Fuel Tank Size: 22gallon tank



(11)

29

Custom Trailer Build

Due to starting from scratch aside from a base frame on a trailer, there is a vast array of designs.

Common design considerations include weight dispersion, entry locations, features to be included, and accessibility.

Typical Specs: Varies greatly based on the trailer's base frame.



Box Truck Rebuild

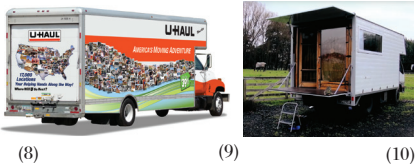
Driving Compartment can be opened to circulation from Living Compartment.

Living Compartment can have enough headroom to stand.

Typically there is no thermal insulation in the Living Compartment.

Typical Specs: 15' UHaul box truck, 10mpg (loading dependent)

- Total: 22'6" x 7'8"
- LC@floor: 12'5" x 7'3" x 6'5"
- Attic Space: 2'4" x 7'3" x 2'3"
- Loading Ramp Width: 2'2"



School Bus Rebuild

Large open interior space allows many variations of floor plans.

High WWR with poorly insulated windows requires removal/replacement if going to cold climates.

Hard to camouflage in urban areas, and require special licensing to operate.

Typical Specs: varies by make/model and capacity- 2004 All American Forward Engine 72 passenger

- Total: 29'6" x 8" x 10'4"
- Interior Dimensions: 28'6" x 7'6" x 6'6"
- Entrance door: 32" x 81", 43 3/4" x 62"



Teardrop Trailer

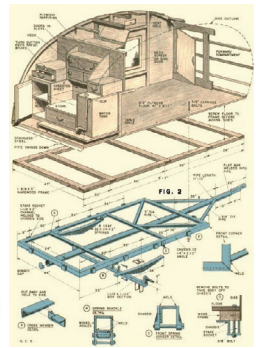
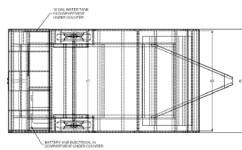
Generally small, fitting for two people and a galley kitchen.

Living Compartment is typically located at the front, while the kitchen is accessed from outdoors.

Historically designed to be built efficiently using 4'x8' sheets of plywood.

Typical Specs:

- Total: 12'2" x 6' x 5'6" (including wheels)
- Total occupiable space: 8' x 4', or 8' x 5' for more space
- Sleeping Compartment: 7' x 4' x 4'
- Cooking Compartment: 3' x 4' x 3'2"

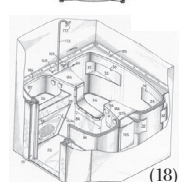
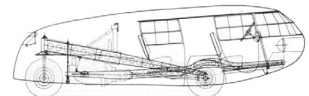
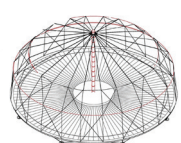
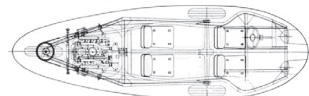


(14, 15, 16)

Dymaxion Car and House

Designed by Buckminster Fuller, these were meant to be a re-envisioning of the automobile.

Dynamic, Maximum, and Tension were defining terms of the aerodynamics, packaging, efficiency, and engineering that informed the designs.



(17)

(18)

(12)

(13)

Case Study: Dymaxion Design

As mentioned earlier regarding Buckminster Fuller, one of the strongest environmentalists with visibly direct influences upon design today, his Dymaxion Car first designed in the 1930s, was capable of reaching 30mpg as a three wheeled, rear steering 20ft. long vehicle that could still reach above 90mph, built in WWII aircraft factories. The Dymaxion Car revolutionized the automobile industry, and challenged environmentalism.

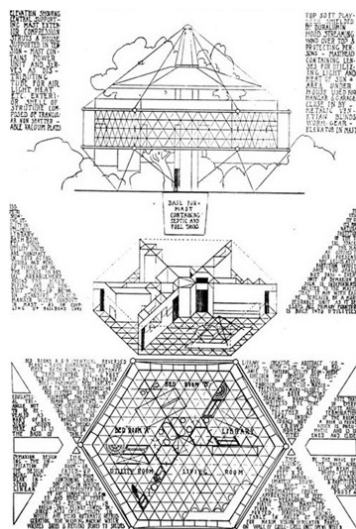
The Dymaxion House, Fuller's best known accomplishment, also never saw mass production, unable to reach \$10million needed to seed it. Only two models were ever built, combined into what is now the "Wichita House". Its round shape minimized heat loss, material needs (it weighed only 3,000lb), and increased its strength (it successfully survived a tornado that passed just a few hundred yards away).

The Central Mast was 22' tall, and the ventilator that formed part of the roof was 18 feet in diameter. Overall, the building's diameter was 36 feet. It had a floor area of 1017 square feet and a volume of 12,000 cubic feet. A crew was needed to dig the hole, sink the mast, and raise the frame, but after that, the rest of the house could be completed by a two person team in less than a day. The modular design meant that the interiors were incredibly customizable; with all of the utilities built into the mast. This was possible by the prefabricated design that planned for each part to weigh no more than 10 pounds, and the houses were planned to be sold in the 1940's for \$6,500 each.

Despite the strict triangular form, the interior spaces were highly customizable—additional interior partitions came with the house and could be easily put up to form additional rooms. In addition, Fuller took advantage of the triangle's strength in construction by creating a hexagonal form. Triangles and tetrahedrons were developed into a practical system of geometry and mathematics he called synergetics.

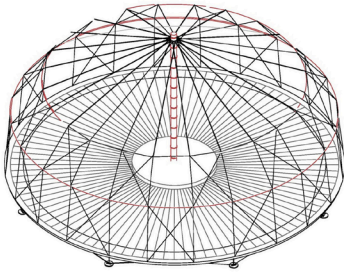


◇◇◇◇ One of the original Dymaxion Houses. (18)



◇◇◇◇ Organization Plans of the Dymaxion House. (19)

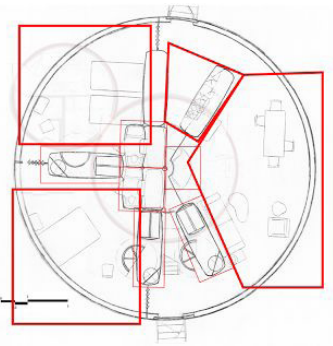
Central planning around a triangular mast. ◇◇◇◇



(20)

The common form and shape of the Dymaxion housing inventions was driven by Fuller’s idea of following nature in forming a structure that revolved around a central point, similar to Fuller’s belief that our universe does the same. By creating a hexagonal form, as triangles and tetrahedrons do to create the practical structural system of geometry and mathematics, this consideration in the design also became apart of Fuller’s synergetics.

The Dymaxion House was one of the first passive houses in the world, as it was designed to be able to function completely off grid once assembled. Fog guns were developed for washing, mixing compressed air with finely atomized water to essentially blast dirt off surfaces, a shower only used one cup of water. The Dymaxion house’s round shape minimized heat loss as well as the amount of materials needed for construction, and also gave the structure enough strength to withstand a tornado in 1964 that passed the house by a few hundred yards, which was quite incredible considering its weight of 3,000 lbs, opposed to the average of 150 tons of the average home.



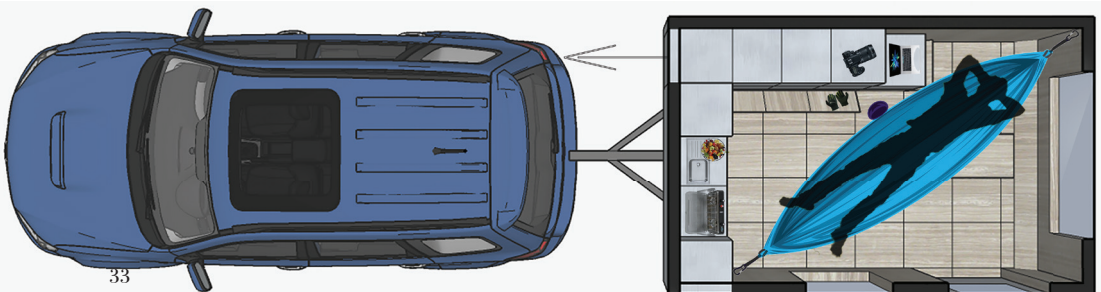
(20)

Buckminster Fuller’s consideration of his design through synergetics developed for himself method and philosophy for problem solving and centrality. By striving to identify, study, and understand what he came to call ‘DYMAXION design,’ he came to appreciate were the concept that “rational action in a rational world demands the most efficient overall performance per unit of input.”, from the words DYnamic, MAXimum, and tensION.

Apparatus: Trailer

This trailer is for a community of individuals. They will take it where they will, customize it as they deem necessary, and will utilize its focus on self-reliance of the individual and the development of their specialization. When all is done, it will return to the depot to be deconstructed and rebuilt for the next individual. Designed as an apparatus to be used with a cyclical nature, the drawers of the trailer are able to be replaced from one individual's "drawer" to another's, in a fashion describable as "plug and play." Having spaces within the drawers and floorplan pre-designated for the Body, Maintenance, Connection, and Zen allows one to establish their plans for their professional and self-reliant plans to be documented, be them through a 2D medium, through the lens of a camera and interaction with the environment, or in written form. From the development of this community a sense of collaboration is born. By sharing a common space for individuals to express their specialization and how they maintain themselves within this environment, it allows us all to expand our understanding of both those professions and develop a shared worldview.

The senses of self-reliance and collaboration are necessary themes. Without collaboration, the specialization of builders of the apparatus would not be possible, nor its ability to have power, gas, or therefore its mobility. However, Buckminster Fuller criticized us humans for becoming too specialized, for still having some worldview expands one's usable knowledge by much greater bounds than by keeping their mind's eye to the hypothetical.

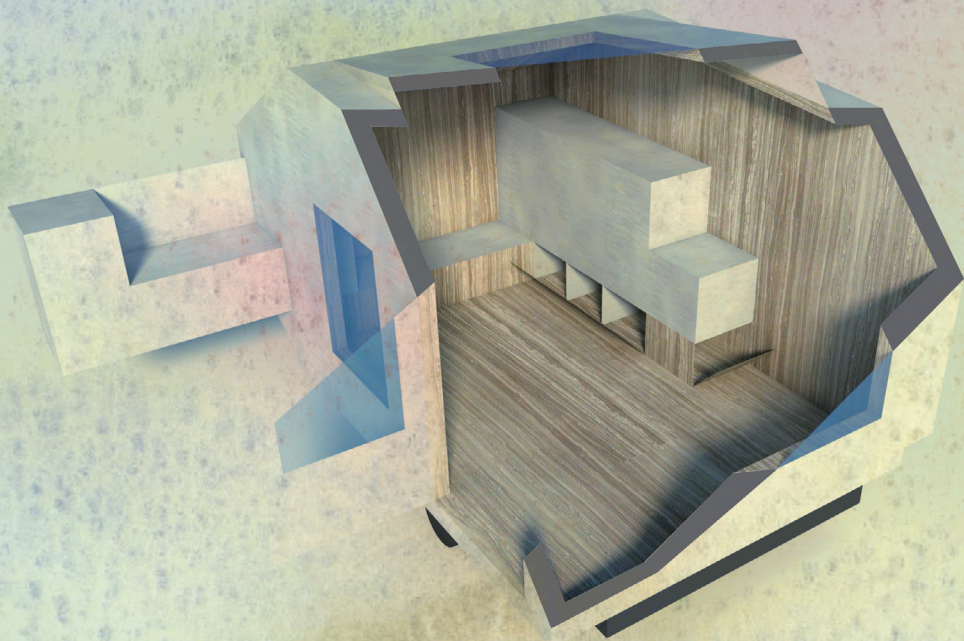
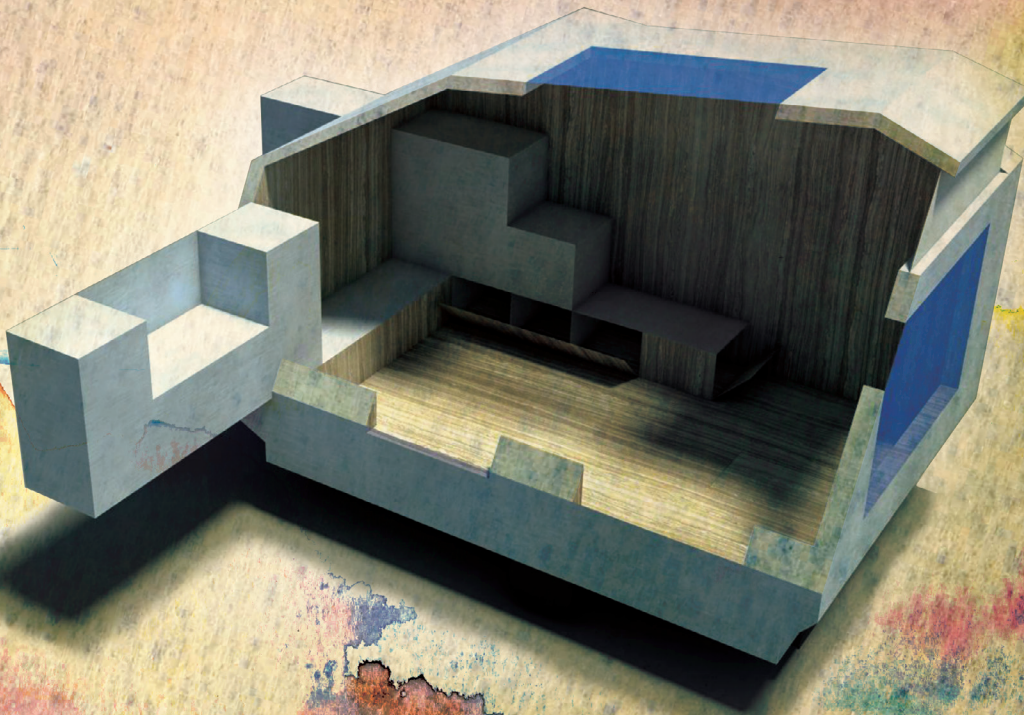




Apparatus: Trailer

To include more than one person and a companion would be to pry them from what they had set out to do in that space; the theme of experience through self-reliance is no longer upheld, for reasons similar that childrens' chores are divvied up between them, for at that point only hyper-specialization is promoted—a detrimental thing to society if it is comprized of only hyper-specialized people, for without the outside influence of other trades and professions we had might as well be programmed robots with pre-designated duties.







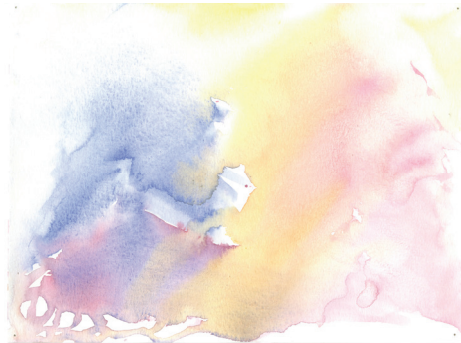
Environments

After the design of an apparatus, it cannot be helped that there be critique, whether by one self or by another. Throughout this examination there should always be a questioning of the environments, the architectural landscapes that one expects to encounter while inhabiting and maintaining their apparatus. Working to imagine these scenes from the seat of the apparatus, one may experiment with mediums so as to become able to describe these places of memory and imagination, allowing the influence of the knife become projected upon the surface of the paper as the scene radiates from the mind via one's brush's bristles. This may come to suggest that perhaps the apparatus designed thus far might not be capable of existing in those desired surroundings, which would suggest that either something more or something different is necessary. There is by no means any perfect or universal apparatus, but within the knowledge of this, the apparatus can comfortably become developed for customization.



Barn on the Hill, Boyne City

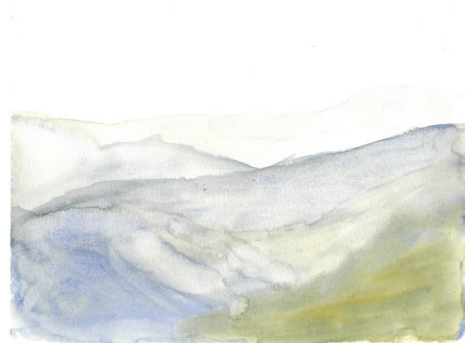
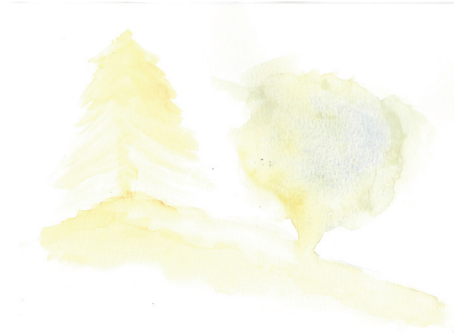
Big Cottonwood Canyon, UT



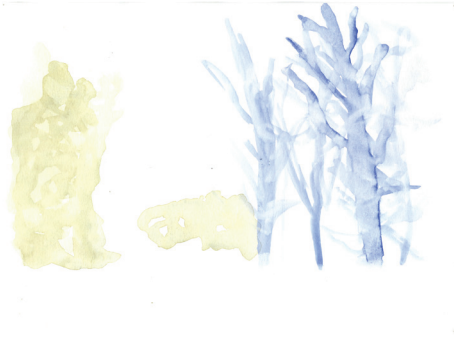
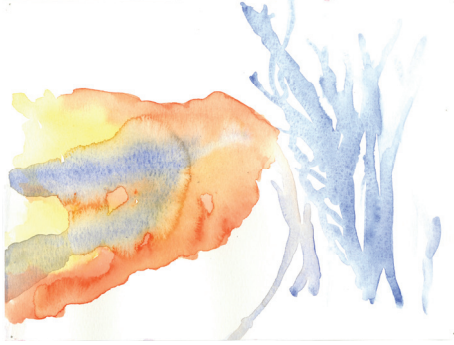
Meadows Chair Open, Boyne City

Experienced Environments

Environments: Watercolor



Imagined Walden Landscapes



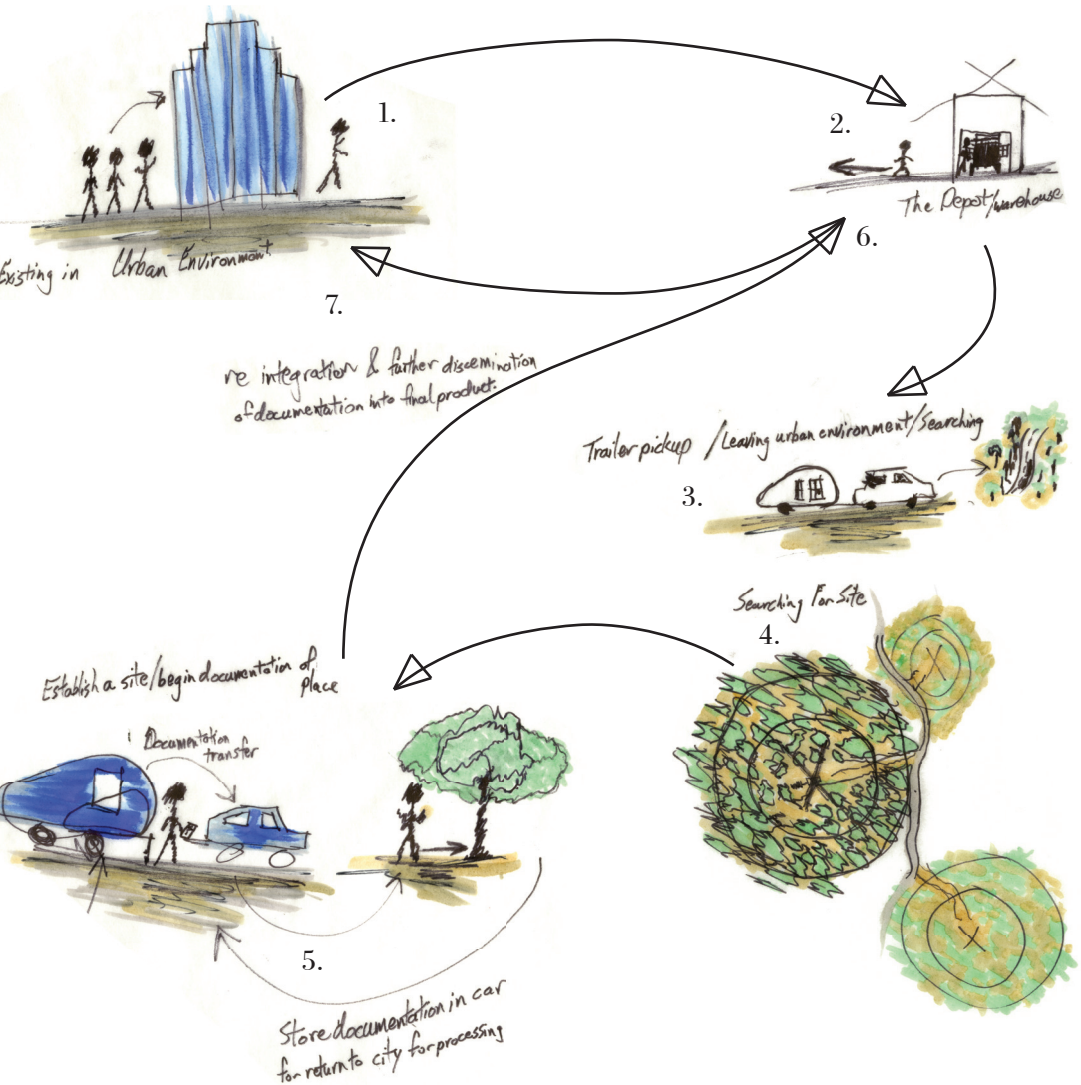
The Trees, Boyne City

Documentation

Humans first started as a nomadic race. We traveled to avoid harsh environments to find food, and over time, we eventually returned to where we had come from, for our familiarity, for ancestral respect, and eventually we went from movement to settlement.

Through settlement and specialization of classes, we required a location to interact, to trade, and share with each other. The city was formed as a compression of its surroundings; it draws people and activities from the surrounding countryside and squeezes them into a condensed space, escalating those influences in scale upon the people of the city. Within this, specialization has escalated as well, and self-reliance has become both all but decayed and near impossible to achieve.

The acts of discovery, documentation, and exposure to critique are extremely intimate—discovery does not require documentation if it is intended only for one's current self, but if this happens then that act of discovery is meaningless. Inversely, if the discovery is to be presented to others even at a one-to-one level, or one's future self, then further documentation must be taken outside of the journey/ discovery step, and is best done upon arrival at some endpoint or down-time. This documentation must have a precursor—there must be work done during the act of discovery to preserve those things found, emotionally, physically, and in accordance with one's mindset. The feel of a space may not be possible to quite be re-established or recreated, but the individual, at least, can then come back to that experiential moment.



This thesis, as a tool-map of the development of that person's interest, provides a different form of statis when desciminated, as its predecessors of Zen and the Art of Motorcycle Maintenance, Walden, and Operating Manual for Spaceship Earth have timelessly challenged their reader, despite their celebration as completed works.

Continuing Statement

And so what had started as a search for a single grain of Pirsig's sand had then changed into a search for the knife, and eventually developed into a hunt for an understanding of Thoreau's seat as well. This said, it is believed that in order to find the individual's understanding, physical travel will be necessary.

The locations of the desired landscapes need not be plotted on a map for the departure upon the swiftest path, for it is not only the place but the journey by which we arrive at our destination we will remember as well if traveling in the mindset of Pirsig and Thoreau.

I have traveled to locations such as Northern Michigan, Saint Joseph, and Cincinnati, but without the use of any of the smaller apparatus I have designed, nor with the mindset of my thesis during my approach to these places, and so I feel that it would be good to revisit these. Looking at the map here, some of the locations I would travel at a macro scale with a larger scale apparatus would be Salt Lake City, Utah, from my past experiences, Moab, Utah,



as somewhere I have not yet traveled much of Colorado, in the Silverthorn & Denver areas, where I have both experienced environments there and have not. Georgia, as an experience to travel to somewhere I have never traveled, but would be traveling with family as a recognizable role and similarity. I think that being said, this thesis is more-so about the experiences of the environments, not the apparatus itself, because the apparatus grants the individual a sense of familiarity between all of the environments, built or unbuilt. Developing the 'ultimate apparatus' is not the goal; it is something designed to allow the individual to 'take a seat' throughout their search.



With thanks to my mentor Noah,
and my furry accomplice Murphy.

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