# SUBVERTING STANDART empowered immaterial

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Subverting Standard Empowered Immaterial [An Examination of Culture, Making and Materiality]

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## thesis statement

The immaterial is a story that narrates history, memory, experience, judgments and actions, expressed through tangible, material traces that define uniqueness. Craftsmen acutely sense and understand the immaterial realm. Their understandings lay framework and open gateways to new architectural form and design possibility. These traces create, but also contaminate the perfectly pristine and idealized state of our cognitive reality and conflict with the intentions of mass-production.

Every immaterial situation induces a material reality. It is material that records immaterial narratives as we engage in the process of making a meaningful world, and a deeper understanding of them makes a more meaningful world. Life's variances create equally variant material counterparts, unique in their own rite. Yet when the most prevalent method of making – mass-production, predicated on consistency, expectancy, and accuracy – homogenizes or erases the variant and unique, by wiping material clean of its immateriality, what meaningfulness is actually made? Duplicated appearances and increased accessibility to material appearances have bland and alienated our material experiences, both for users and makers alike.

Man's alienation from the material world has grown wider, yielding a more meaningless world, expedited by hypermodernity – lightness, acceleration, and instantaneous accessibility. To keep pace with vanishing time, materiality itself has lost dimensionality and permanence. The immaterial vanishes, no longer recordable, as do our experiences with material. Our interactions, exchanges, and repercussions of decisions are brief, if perceivable at all. History and memory are easily erasable. An exploration into empowered immaterial, the 'impossibility of a perfect state', as catalysts for a never-before-seen process of design and construction can reveal untapped material potential.

## thesis paper

#### INTRO

Made things are intended to communicate ideas at the most basic visual level. Richard Sennett states that the process of making concrete things reveals to us aspects about ourselves and that learning from those things requires us to care about qualities.<sup>2</sup> Making for oneself is important to empower personal knowledge base and provide comforting truth, for objects we do not make ourselves are "obscure", because we do not fully understand them.<sup>3</sup> The time that assumes the majority of a object's life occurs during creation periods, and that temporal creation process is often not visibly obvious, shadowed by the final created product.

For objects to become explicitly understood requires charting past meanings and leaving open possibility for new meanings upcoming. Meaning is created by actively engaging with the world. The process of making meaning captures and records immaterial stories, including human judgments and actions, weather, or decay. These moments are temporal in nature. Understanding these immaterial moments relating to the real, material world is important to the creation of a meaningful existence, for it grounds a person in the context of their own concrete, personal life narrative. Too often we find ourselves lost in a society pacing so fast that the physical and temporal realms seldom dialog one another. In doing so, we lose permanence and our relative place. Tacit knowledge grounds our conscious awareness. "... There is a constant interplay between tacit knowledge and self-conscious awareness, the tacit knowledge serving as an anchor, the explicit awareness serving as critique. And when institutions do not allow tactic sensitivities to develop, motors of judgment stall. People have no experience to judge, just a set of abstract propositions about good-quality

work."<sup>4</sup> The manner in which we relate to these realms can have a profound impact on our quality of life, as this thesis seeks to interrogate.

To have an experience that completely conforms to our expectation is impossible. It is only in the unique, deviating relationships between our expectation, memory, and existence is the only real truth. Not until we accept this inevitability of life, versus conquering and removing variance, we will access the largest and most meaningful pool of potential. We are attempting to make our experiences certain before they occur and the material that record the moments sterilized of records. And that will lead to a poor and bland existence.



image 1

**NARRATION: MEMORY + PERCEPTION** 

The process of living our human narratives reveals of us dynamic, spatial stories from within us. These constructions are complex formations of time and identity that are manifest through making. We will critically learn more about ourselves by doing so, thus becoming better people. In The Grundrisse, Karl Marx acknowledges craftsmanship, in the broadest sense as "form-giving activity." "An action permits one to see something"<sup>5</sup> and because making is a two-fold action, its effectiveness can be profound.

"Craftsman suggests a way of using tools, organizing bodily movements, thinking about materials that remain alternative, viable proposals about how to conduct life with skill,"<sup>6</sup> which all involve intimate decision-making and responsiveness of a human. No less than a piece of wood, people and human identities are subject matter capable of crafting by these same suggestions. Social and self relationships develop thoroughly by making physical things. Making

sensitive, if you are lucky enough, then you may exceed your expectations. It is a combination of feelings and a function, shapes and things that come to one in connection with the discoveries made as one goes into the wood that pull it all together and give meaning to form. So, mostly, I belive in the fact that I will be able to combine all this, to make an object that is simple, practical and pleasing. ... Sometimes the objects I make border on the nonfunctional, the function being of secondary importance."<sup>66</sup>

IMAGE 1 [Above]: Woodworker James

Krenov notes a particular sensitivity that

accompanies a maker when they enjoys their work and is in dialog with a material: "You are playing with textures, tensions,

the things that happen, and if you are

GRUNDRISSE, 1939: From German: "Outlines of the Critique of Political Economy" by author Karl Marx [except]



promotes "all-around development of the individual."<sup>7</sup> Understanding of the making of concrete, external things can help describe how identities are constructed and how might be better constructed.

Making, particularly craftsmanship, is innate to humans. It is part of being authentically human, not just a foregone manner of living that ceased upon inventing machines. It is a "basic human impulse, the desire to do a job well for its own sake."8 Yet it is shunned in contemporary society all too often, especially as the hypermodern intersects the lines of mass-production. Dispelling this impulse also dispels being and making authentically identifiable constructions, both the objects we use and our own selves. "The craft of making physical things provides insight into the techniques of experience that can shape our dealings with others"<sup>9</sup> and without it, we lose the ability to make ourselves better or interact with other entities in the world fully. "When and why do we prefer things not to have been affected by age and wear? ... A more important and constant reason may be that we do not like to think of ourselves as aging, and project this feeling on to our possessions. When we renew them we half imagine we renew ourselves."<sup>10</sup>

Uniqueness is the substance of narrative contains memory. "Body and mind are made of something, of the only thing that is, which is neither spiritual nor corporeal, and which like others, we will call substance. This substance is a priori nothing other than a fact of curvature."<sup>11</sup> It is in the divergences of existence that experience is inexhaustibly unique. Every experience has a one-off combination of contextual framing and occurrences that make the variety of any parable of intrinsically infinite."Stories thus carry out a labor that constantly transforms places into spaces or spaces into places. They also organize the play of changing relationships between places and spaces. The forms of this play are numberless..."<sup>12</sup>

Each movement within a situation, either affirmed or declined,



describes the uniqueness of the experience."In other words, IMAGE 2 [Above]: STORY CHAIR In a description ... organizes movement."<sup>13</sup> Where stories are disappearing (or else are being reduced to museographical objects), there is a loss of space: deprived of narrations, the ultimately create the object in the group or the individual regresses toward the disquieting, fatalistic experience of a formless, indistinct, and nocturnal totality.

metaphorical sense, narratives are the invisible substance that connect and fill our material work. The circumstances, characters, scenes, and plots in a story physical realm.

#### **DIDACTIC LEARNING IN NARRATION**

"Both work and play are equally free and intrinsically motivated, apart from false economic conditions which tend to make play into idle excitement for the well to do, and work into uncongenial labor for the poor.... Work which remains permeated with the play attitude is art."

~John Dewey in "On Democracy and Education"<sup>14</sup>

The uniqueness of a spatial story, materialized through human actions, teaching one-of-a-kind lessons, for each new movement prompts a series of alterations, needing to be dealt with in their own unique rite. In the making process, this sort of chance appears in the form of risk.

"The essential idea is that the quality of the result is continually at risk during the process of making.... Workmanship of risk."<sup>15</sup> Every action or lack of action produces a certain set of conditions, that whether desirable or not, are inevitable and unique because of the risk. And the sensitivity to anticipate possibilities diminishes the fear that mistakes will occur. So long as a risk is involved, mistakes cannot be made."Taking guidance from expressive directions aids this process [developing skill] in ways that more denotative directions would not. Expressive directions provide guidance about the sense of a practice whole."<sup>6</sup> A mistake is not an error; but an experience not conforming to rigid guidelines and expectations that stand out and provide guidance into uncharted directions. "Diminishing the fear of making mistakes is all-important in our art, since the musician on stage can't stop, paralyzed, if she or he makes a mistake. In performance, the confidence to recover from error is not a personality trait; it is a learned skill. Technique develops, then, by a dialectic between the correct way to do something and the willingness to experiment through error."<sup>17</sup> The standing-out is uniqueness and the point of greatest potential knowledge gain, if it is chosen to be reacted to. In theatrical Improv skits, the reaction to future undetermined lines can produce the greatest variety of scenes. "Anticipation can be strengthened; people can become better at negotiating borders and edges; they can become more selective about the elements they choose to vary."<sup>18</sup>

This type of learning is a diversification of educational moments. No two individuals will garner the same didactic education over their lifetime or even in the same situational moment. The unique can be interpreted uniquely, adding even more levels to an endlessly potential nest. It is critical "... to diversify

the forms themselves by allowing slight improvisations, divagations and irregularities so that are continually presented with fresh and unexpected incidents of form."<sup>19</sup> Skill builds by moving irregularly, and sometimes by taking detours. "Each stage, though challenging, grounds moving on to the next; but each is also an independent challenge."<sup>20</sup>The uniqueness of these challenges allows us to process strategies ... and the path chosen to arrive at our conclusion is more memorable. The more unique and object or event, the more memorable that story will be in honing life-skill."... problem solving and problem finding are intimately related in his or her mind."<sup>21</sup> Routine of critical dialoging with oneself allows a reflection of personal patterns and aids in anticipatory and reactionary growth. "Going over an action again and again, by contrast, enables self-criticism. Modern education fears repetitive learning as mind-numbing. ... may avoid routine - but thus deprives children of the experience of studying IMAGE 3 [Above]; KRENOV CABINET their own ingrained practice and modulating it from within."22 Laborious work, however, does not have the critical cognitive connection he possesses uniquely with engagement of unique circumstances required to assess of the important points to keep you challenges and react didactically. Therefore it does become mind-numbing, dull, bland, meaningless, and forgettable.

These independent challenges-to-face produce a sense of freedom, empowerment, and possibility if viewed through the craftsman perspective. It is "a way of life and development you're doing it in a way that, despite all the sweat and hard work, gives you outward from an inner core; something of the same process that nature uses in the creation of a tree - with one not only aesthecically, as oddities and addition, the aspiration of man to produce the wonder and beauty of his potentialities."<sup>23</sup> Learning is not limited; it is as profoundly unlimited in possibility as experience itself. David Pye contrasts the workmanship of risk with the rigid mentality of certainty- intentional attempts to constrain and minimize risk. Unlike workmanship of certainty, which has more beautiful, things we can leave to our children."67 no freedom a true "... tectonic experience conveys a sense of freedom. What I mean here is better conveyed using an analogy with play. We are familiar with plays as being outside ordinary or 'real' life.... Once the rules of tectonics are set



image 3

This cabinet above described as made

by a craftsman, and the intimate his made object: "... I think that one going is that you enjoy it - not hobby enjoyment of being with it.... methods of working (with wood) that lead to a sort of harmony, a satisfaction that you are, with a minimum effort, achieving the maximum of sensitivity. You are saying what you want to say, finally, and satisfaction. This is the way you want' to live. Fine things in wood are important, rarities, but because we are becoming aware of the fact that much of our life is spent buying and discarding, buying again, things that are not good. Some of us long to have at least something, somewhere, which will give us harmony and a sense of durability – I won't say permanence but durability – things that, through the years, become more and



up, they become a treasure to be retained in memory and transmitted. ... and as is the case with all artistic fictions, tectonic fiction creates its own supreme order where at the least deviation 'spoils the game'. We play a game of chess not out of necessity but of our own free will."24

Tactility transmits knowledge as well, attempting to remind us that we are in a constantly dialog with the concrete, material world at all times, regardless of the pace at which it is dissolving. There is an "intimate connection between hand and head. Every good craftsman conducts a dialog between concrete practices and thinking."25 The hands and physicality of work done in a didactic manner also deepens our connection to the world, increasing our familiarity, understanding, consciousness, and meaningfulness with it. "The artist is a technite not because he is a craftsman who works with his hands, but because he possesses the knowledge and skill that serve to deepen our understanding of ourselves as maker, as homo faber, and thus our familiarity with the world."<sup>26</sup>

#### TACTILE **ENGAGEMENT: DIMENSIONALITY**, SURFACE + LIKENESS

#### I. DIMENSIONALITY ENGAGING DEPTH

Humans perceive the material world as facially flat. Kimberly Dovey would describe this flatness as "geometric space". "Geometric space is a representation of a set of relationships among value-free locations. It achieves accuracy and predictability at the expense of experiential depth. It is a representation of lived-space with the meanings and values extracted."<sup>27</sup> As an individual engages the material realm, dimension is created. It is only when that individual employs recollected memory or through direct engagement at that moment, does the material gain anything less than also raises questions about judgements our perceived facial qualities. This he has term "lived space" , material with engaged dimension. "They grow, are infused

with life, may be healthy or unhealthy, and may die. [but] since it is laden with meaning and memory, lived-space is more personal and idiosyncratic that geometric space."28 Dimensional material is the substance of architecture and the recorder of its story. It absorbs natural weather or wear and human activity as memories of its temporal narrative to that moment of engagement. Memory can be seen in vestiges and inflections inscribed in material faces, and these vestiges and inflections solidify aspects of temporal events and decisions that otherwise could not be paused.

These vestiges and inflections are idiosyncratic definitions of material uniqueness; knots in woods, dents in metal, a crack in porcelain. It is with these trace nuances embedded and folded in a material that present themselves as one-off situational conditions of character to a craftsman. His or her sensitivity emphasize them in their consciousness and their skillful knowledge can translate and incite the possibility of making unique, new meaning out of the traces. Speaking towards his preferred medium (wood) James Krenov notes his exhilaration in creating unique pieces: "You are playing with textures, tensions, the things that happen, and if you are sensitive, if you are lucky enough, then you may exceed your expectations. It is a combination of feelings and a function; shapes and things that come to one in connection with the discoveries made as one goes into the wood that pull it all together and give meaning to form."29

For the craftsman, the hand is raw material, too. Traces of lived world encounters are tightly folded in tactile memory within the skin. The skin records scarring, callusing, heat, and abrasion and are a material for both forming and receiving impressions of an individual's











figure 1

FIGURE 1 [Far Right]: APPLES-TO-

APPLES This series of apples shows thematically that without consciously acknoweldging imperfections as part of our everyday world, we grade on a scale of worthless or unuasable to perfect (pristine). Imperfect progressively falls on the red apple, the apple that shows signs of handling, falling, picking, and moving. These markings narrate the apples development and life. The series and and individual's tolerance for the imperfect.





time. The hand can anticipate forms for what it has not yet perceived, contorting to a wine goblet's roundness, for example, before touching its material surface. Markings show particular sensitivities that come from actively engaging a lived-world material. The subtlety of the evolvement of the finest materials shaped with intense skill, inadequately termed craftsmanship, can produce a basic sensitivity.<sup>30</sup>

Mass-production chooses to eradicate material idiosyncrasies to accommodate a greater level of expectancy from consumer markets. The decisions image 4 are comparable to erasure of memory, and the



repercussions are bland uniformity, consistency, and monotony in an otherwise exceptionally potential substance. It is towards this erasure of rich, old stories that G.K. Chesterton wrote, "It is of the new things that men tire... of fashions and proposals and improvements and change... It is the old things that startle and intoxicate. It is the old things that are young."<sup>31</sup> In erasing distinctions, it opens material faces up to be semblance fallacies and the acceptance of likenesses - and close-range reproduction.

#### 2. SURFACES THE INTERFACE OF MATERIAL

"Each surface is an interface between two image 5 environments that is ruled by a constant activity in the form of an exchange between the two substances placed in context with one another. ... the appearance of surfaces and superficies conceals a secret transparency, a thickness without thickness, a volume without volume, an imperceptible quantity."

~Paul Virillio in "The Overexposed City"<sup>32</sup>

The world is composed of infinitely many faces. A face is IMAGE 4 [Far Left Top]: The Wegner Dovey's two-dimensional geometry; the exterior-most face is the one we actively engage. A surface, though, is a content filter. Surfaces occur only through direct, active contact with is reduced to a single, static plane. Once faces in experience. "The brain receives more trustworthy information from the touch of the hand than from images with updatine and the object. in the eye - the latter often yielding false, misleading appearances."<sup>33</sup> It is activated by through proximal contact and white image [BOTTOM] shows what of a subject's consciousness, whether live experience or memory-evoked anticipation. Surfaces are not part of either object exclusively, but its own entity. It is a relationship 31. Napolean of Notting Hill, 1904 formed by a subject's applied tactile consciousness to the of the future without the advancement outermost face of material. Nothing is revealed or known to industrial era a subject until their consciousness has entered close enough into this proximal relationship to create a surface (or surface condition). "An element may be obvious or barely perceptible. ... it might be very slight yet very important aesthetically. Very slight deviations due to approximating workmanship would also be important elements. It is a matter of the greatest moment in the arts of design and workmanship that every formal element has a maximum and minimum effective range."34 Folding allows surfaces to become more dynamic and engaging.

Disassembling (unfolding) or refolding faces create yet more faces with which to engage. This act can take what is perceived as flat, and upon experiential engagement, reveal greater depth and knowledge. Anticipatory (conditional) surfaces can occur after repetitive engagements with similar objects faces and suggests an expectant relationship or transfer to occur. Occasionally, the expectation is not fulfilled, resulting in a semblance. Veneer surfaces can be false or unfulfilling, suggesting an exchange from memory yet remain unresponsive. Heidegger references semblance as this false

Chair seen is expressed in terms of its geometry. The pure gray image shows the shallowness of our depth perception until we engage. The depth we engage tactically we begin the realize the depth through infinite encounters with dynamic and infinite surfaces that

IMAGE 5 [Far Left Bottom]: The black we see, though it only has depth through our memory of it or familiar objects we have engaged similarly in the past.

Novel by author G.K. Chesterton telling of technology as a critique of the



surface. Semblances sense depth, but through experiential engagement the object reveals no depth. It is when "geometric-space" remains geometric, instead of transforming into lived-space. It is unresponsive surfaces that are cold. The craftsman's intimate proximity during tactile experience with material gives him the most advantageous position to create intense surfaces. He can garner the most knowledge from these faces while the faces are infused with knowledge from the craftsman's hands. "It can only be 'read'-perceived for what it is- by an observer stationed within those limits. The slight deviations from regularity in the profile of our column will have become imperceptible, probably, by the time your eye is four feet away from it; but the ... designed form will be imperceptible because we are viewing it at less than the minimum effective range for that element."<sup>35</sup> Conversely, a mass-producer who is subjected solely to labor neither benefits from nor needs to create surfaces. Anticipatory surfaces have either been exhausted into monotony or are certified to remain geometric space.

#### 3. ACCESSIBILITY + REPRODUCING LIKENESS

#### **HYPERMODERN**

The world has become hypermodern and efficient - lighter, faster, and instantaneously accessible. Paul Virillio writes "With new instantaneous communications media, arrival supplants departure: without necessarily leaving, everything 'arrives.' ... Suddenly speed becomes a primal dimension that defies all temporal and physical measurements."<sup>36</sup> As a result, localized (regionally unique) language, culture, food, information, and art are unifying and uniformly homogenizing further each day. So, too, are materials and objects, and our experiences with them. Accelerated by this new sense of time, interactions, exchanges, and repercussions of decisions are brief, if distinct enough to be grasped by the body or mind at all. And since we rely significantly on our relativity to material to locate our place, we are losing our grip with that reality.

Virillio notes that generically replicated gateways and hyper-sped accessibility create placelessness and a loss of regional identity to the homogenous world. Accessibility promotes uniformity destroying character. For Virillio, the means

of entry to specific locations should suggest to that region's unique character, if any remain. Walter Benjamin would say the presence of original character in any place or object "is the prerequisite to the concept of authenticity."<sup>37</sup> Regional character is nature's one-off work of art. "Even the most perfect reproduction of a work of art is lacking in one element: its presence in time and space, its unique existence at the place where it happens to be. This includes the changes which it may have suffered in physical condition over the years as well as the various changes in its ownership. ..." 'The original preserves all its authority.'<sup>38</sup>

Unfortunately many modern objects are intentionally made as pristinely homogenized replications with set life-spans. This homogenized purification and temporal obsolescence limits the ability of contemporary objects to change. "Modern objects are eroded by time."<sup>39</sup> With time and space barely perceivable, originality, authenticity, and idiosyncrasy suffocate under uniformity.

This authenticity comes from its previous narrative and future potential; both uniquely set the object apart. "The authenticity of a thing is the essence of all that is transmissible from its beginning, ranging from its substantive duration to its testimony to the history which it has experienced... and what is really jeopardized when the historical testimony is affected is the authority of the object."<sup>40</sup> Looking to a unique object's history can empower the authenticity of its future.

People have always want things and qualities nearer themselves. Yet closeness to the likeness of a thing and not the thing itself is the denial of the truest, real uniqueness. It "is just as ardent as their bent toward overcoming the uniqueness of every reality by accepting its reproduction. Every day the urge grows stronger to get hold of an object at very close range by way of its likeness, its reproduction. Unmistakably, reproduction as offered by picture magazines and newsreels differs from the image seen by the unarmed eye. Uniqueness and permanence are as closely linked in the latter as are transitoriness and reproducibility in the former."<sup>41</sup> Accessibility and closeness to photographs (synthetic, two-dimensional reproductions of likenesses, capturing a physical reproduction in the frame) does not allow a person to practice sensitivity in reading unique distinctions. Instead it aids in the projection of an expectation that may be too narrow in perspective scope and limits future potential, further alienating us from the reality of the material world.

As expressed earlier, both the sensitivity to detect, respect, and learn from unique details and the details themselves are essential to understanding authenticity and living a meaningfully fulfilled life. "What is striking in much of Scarpa's work is



the attention that he lavished on the smallest detail."<sup>42</sup> Yet these are often systematically oppressed from showing visibly in the most prevalent making form of mass-production. The absence of expression actually accentuates the presence of the intention to oppressively bland, while raising questions of clarity about origins and process – that is, how? "There are people for whom wood and working with wood is not simply a profession but a very intimate thing: the relationship between the person and the material, and how they are doing it. I mean how they are doing in the most intimate detailed sense; the relationship between wood and the tool that they use, between their feelings, their intuitions, and their dreams. Wood, considered that way, is alive."43

Instead of expressing identifiable confidence in authenticity created by history, it narrates a synthetically unauthentic preference toward ideal images that do not reflect pasts and are solely future-sighted. We have chosen to confine objects to idealized states that we feel remove inevitable chance, variance, and the role of humanity. When it is entirely the inverse- these aspects grant the enjoyment, character and meaning to life. leffery Kipnis notes, "Architecture in the service of institution is architecture in the service of man as he wants to see himself and to continue seeing himself. As such, it is a denial of architecture as a perhaps the vehicle of becoming"<sup>44</sup> and becoming in an authentic manner is the doorway to possibility. The more we erase the marking and uniqueness, the less diverse and blander our world becomes, as seen in regional identity loss. Pye compares the imbalance of authentic distinctions and variances to other archetypal elements with dietary nutrition, components essential to sustaining life. "Vitamins are necessary to life, but only in small amounts. Take them in large amounts and they make you ill.... diversification: though we may not take much notice of it, we need to have it."45

#### REPRODUCTION

Reproduction of photographs separated experience even further than reproduction objects. Visual reproduction to that point (lithography, stenciling, or painting) took immense amounts of time and required connection to the hand and eye. Authenticity was in the originality. "For the first time in the process of pictorial reproduction, photography freed the hand of the most

important artistic functions which henceforth devolved only upon the eye looking into a lens. Since the eye perceives more swiftly than the hand can draw, the process of pictorial reproduction was accelerated so enormously that it could keep pace with speech."<sup>46</sup> Secondhand experience leads to an insensitivity of variances and the insensitivity is a "consequence of the shortcomings of photographic reproduction."47

Photographic likeness to the real appearance of a place or thing promotes less interpretation on behalf of the one experiencing. It is a replication of a "geometric-space" representation, devoid of even less meaning and far more alienating than "geometric space" alone. The likeness was empowering, having mastered duplication which such precision took immense effort. However, the appearance of the likeness remains, while the experience never did. The IMAGE 6 [Below]: Volkswagen's photograph has limitations yet it is a habitual contributor to Factory] in Dresden, Germany grants interpretation of secondhand experience and our attachment visitors controlled access to view VW's process of mass-production by to replication standards. "Things are designed with future photographs of them in mind. A good reproduction of a on-looker and acts as a distraction. The good photograph can show an astonishing amount... but it always tells less than the truth."48 The truth that cannot be told, the immaterial story, is often forgotten or silenced. experience is secondhand and therefore, Photographs in this way frame our expectation with singularity."Touch poses different issues about the intelligent hand. It has seemed that touch delivers invasive, 'unbounded' data, whereas the eye supplies images that are constrained to a frame."<sup>49</sup> Authentic material objects are laden with the physicality of lived-space and longevity of time. However, it is via mass-replicated interaction, "many people don't realize these truths [about the nature of wood] because they have never been close enough to real wood, beautiful wood in its natural state. ... They've lived with wood secondhand, and they are just not aware of the richness that is to be found in individual pieces."<sup>50</sup> The unique riches "include the changes which it may have suffered over in physical condition over the years as well as the various changes in its ownership."<sup>51</sup>

Die Gläserne Manufaktur [The Glass programming the space like a stage. The use of glass frames visibility for the experience from behind glass is pictorial and flat. There is no new phenomena to experience, for revelations of making are not internally motivated. The reproduced..

image 6





#### IMAGE 7 [Below]: The regulation of a man's hand can only be controlled so far. The expectation that people need to live with objects made so alien to themselves begs the questions do we really care about the things we make? our expectations too great?

IMAGE 8 [Bottom]: Any major factory today is run by digitized robots far too unhuman if they are beyond human capilities. We make our tools, but eventually they start to define us.



avoid. In desiring quantitative accessibility, Tayloristic massreplication can certainly satisfy demand."Maximum prosperity If so, what is the person's role? And are can exist only as the result of maximum productivity,"<sup>52</sup> Fredrick Taylor stated, where best work results from singularly focused but repetitive tasks that optimized pace more precise than man. Are objects and efficiency. Henry Ford adopted this belief in the assembly line. It has continued to meet growing demands, increasing

**MASS-PRODUCTION** 

efficiency by more stringently regulating possible outcomes. image 7 Regulation increases decrease judgments of individuals making an item, removing them in immaterial presence thought, mental presence, emotions, care, identity - and eventually in physical presence."One of the difficulties is the lack of integration between the designer and the producer – the evolvement of material and method into a well conceived idea. Big city architecture has reached such a profound state of boredom that man might unwittingly destroy it in one last tragic gesture - without humor. Sentimentally again, we can look back to the thirteenth century, when almost every hinge was a museum piece. Where there was a touch of greatness in the majority of acts and conceptions."53

Photographically precise expectations and desire to for

closeness create a growing demand for accessibility and

precision. Ownership is exhilarating and a difficult habit to



"Workmanship of certainty is always found in quantity production, and found in its pure state in full automation. In workmanship of this sort the quality of the result is exactly predetermined before a single saleable thing is made."54 "The modernist movement has only accentuated this [vectoral singularity] mode of objectivity. For it wished to eliminate everything that didn't contribute directly to usage or function and to build using a minimum of materials. It was a whole aesthetic of the engineer, by maximization: Existenziminimum."55 "Digital machines and productive technologies in general allow for the production of an industrial continuum. From the mold we move toward modulation."<sup>56</sup> Nothing is ever truly 'finished' or complete

but in a spiraling progression wider than our narrow perspectives can conceive. "Getting things in perfect shape can mean removing traces, erasing evidence, of a work in progress. Once the evidence is eliminated, the object appears pristine. Perfection of this cleaned up sort is a static condition; the object does not hint at the narrative of its making."57

A machine's capacities for instant erasure and refiguring, the architect Elliot Felix observes, "each action is less consequent than it would be paper ... each will be less carefully considered."<sup>58</sup> However, when a man can design his own obsolescence from making, by programming machine to do tasks with even greater efficiency, standards that are no longer human are set to produce objects for humans. Our techniques for precision are beyond human capabilities. The "Isaac Stern rule" state the better your technique, the more impossible your standards.<sup>59</sup> The better your tools, the lesser the variety. Hence, the greater the limitations of results, means that less, is in fact, possible. "In proportion to the flood of consumer goods, we are probably at one of the lowest ebbs of design excellence that the world has seen. It requires a genuine fight to produce one well-designed object of relatively permanent value."<sup>60</sup> And a well-designed object knows its immateriality intimately and expresses it.

Without immaterial present, seldom exists desire to do work for its own sake of good quality. There is no inherent responsibility felt toward the matter of 'well'. Well is a care and owned responsibility toward integrity, a "feeling of doing something we want to do – and doing it well, by measures both honest and sensitive."<sup>61</sup> The immaterial does not attempt to impress with its true importance, small and subtle marking are enough of a raised hand in the rear of a classroom. It is confidently assured by its authenticity, and rightfully so. The past is the only true thing, and the immaterial is pure history. The immaterial is modest, humble and waiting patiently to let its power speak. And for an individual engaging in making, the thrill of possibility comes from "trying to combine unpretentiousness with a seeking of one's own sensitivity. For each level of work there should be the level of doing that work well."62

#### CLOSING

"Material never has its own movement. A beam thrusts, a piece of iron follows a gesture; together they form a naturalistic and anthopomorphic image. The space corresponds."<sup>63</sup> Material is composed of dense and internested surfaces, often giving the appearance of randomness or chaos. The material conceals this, and it is the facilitating maker's role to identify the structure and story. Because the nature and dimensionality of material is never set beforehand, "something credible can be made, almost anything."<sup>64</sup>

It is the immaterial left in material that alludes to its creation and injects meaning into the world. When we make, we make meaning, aware of it or not. The power and knowledge in a material's unique narrative resides in the small, humble markings inflected in the surface that we engage with. It is by understanding the story set before, and shifting our bias away from the future, that the future comes alive as we make things without likeness."The Greek ecstasis meaning to put outside, to put out of place, led to the notion of being beside oneself, of being transported."65 It is not a question of where inspiration comes from or how it is transported to us. It is a question of how and when we decide to let the immaterial speak, to put it on stage, and empower and to translate its unique authenticity - for the volumes of material potential waiting to be freed are as endless as narratives that created the marks in the firs place. The key to meaningful making lies in the impossibility of perfect states. Embrace it.



image 9

## precedent research

#### HANS JØRGEN WEGNER

Hans Wegner was an architecturally educated mid-century Danish furniture maker. His several series of chairs include the Rounded Dining Chair (Image 10) and the commonly replicated Peacock chair. His workshop employs only a small team of craftsman. Each member is one of the finest Artsand-Crafts trained woodworkers in the world, who hand make every piece from solid pieces of timber, originating from personally selected forests.

Even in creating multiples of his same design, Wegner's attention to the relationship between his woodworking staff and pieces was carefully considered. He was acknowledged having affirmed there are cuts that saws can make better than a person, yet the sanding and sensitivity to smoothness cannot be machine determined. Quality control resides in the pride and knoweldge of the craftsman as they make the product. They have the sole responsibility to determine correctness. Through this manner of dialog with a piece the artfulness is retained in a quantity-produced system.

Today, Wegner chairs are some of the most prized furniture pieces in the world simply due to the time and care taken to create one. The Centre Pompidou in Paris exhibits his work permanently.



image 10: Plan-Elevation Sketch of *The Chinese Chair*, 1945

image 11: Rounded Dining Chair, 1949

#### SHINTO SHRINE | ISE, JAPAN

In Shinto philosophy, nature and man are linked together in harmonious proximity. As is common with many Eastern religions, the cyclical nature of life and death plays a role in Shinto. Shinto never believe as a process never truly complete; rather each stage is one of becoming something else (often in another life).

This particular shrine, one of the oldest Shinto shrines and largest multi-construction Shinto complexes in Japan, located in the town of Ise, has practiced a rejuvenation cycle for over 900 years. This cycle includes the skillful education of its caretaking craftsmen, as well as the wood timbers used in construction. Selection of workman skilled and precise enough to tend the timber begins young.





There are two adjacent sites, identical in all measures. The shrines (Image 13) are made of wood and thatched roofs up to one foot thick of individually, hand-laid strands. The techniques and dexterity are trained by master woodworkers, all whom have been trained through apprenticeships since the first shrine caretakers.

A cycle concludes and restarts every 20 years. There are two sets of identically proportioned timbers continuously rotating positions, either in-use on one site or departing for refreshing and returning refreshed on the other. Disassembly and assembly each take eight years, with four set aside for cleaning, carving, and the removal of weathered soot. The disassembled members are carried to an on-site woodshop; the final ones in front of a crowd and accompanied by a huge festival. Shinto not only accepts renewal and permanence, they



embraced the process as essential to achieving the IMAGE 13 [Left]: Craftsman dressed in white suits are trained to work for ultimate quality of life.

A large scale architectural example of material reuse, the Shrine at Ise has served generations, communicating through visible and temporal means the values and ideals of rebirth and rejuvenation that accompany the religion. It serves to remind us that traditional relationships with the material world can exist have permanence and create worthwhile meaning - spiritual in this case.

life carefully dismantling the wood, and tooling it for eight years until the wood has been refurbished to a clean state.

IMAGE 14 [Above]: The two sites sit adjancent one another. One is open while the other is being dismantled and rebuilt. The difference between the two is strikingly obvious.

#### **IKEA**



Ikea® brand produces furniture with the intention of reconnecting an owner to their object with self-assembly and 'customizable' selection. This attempt is about the most intimate a mass-produced object can be with its owner. However, there are many factors not considered, esepecially the period of creation, prior to assembly, sale, distribution or even packaging, which makes the attempt somewhat artifical or superficical.

Material used to form Ikea products is vineer paper. This exceptionally thin surface covers a material that is recycled sawdust or metal in several cases. (IMAGE #) Yes this can be considered ecologicaly consicous, however, when considering the relationship of the factory worker, who cannot tell one spec of sawdust from the next or the next veneer print sheet from the following, what meaning is there for this indivdual. His labors can be easily replaced to increase efficency, yet this does not increase the meaningfulness of creating something concrete and tangible. Pieces are molded exactly the same. If there is a slight deviation from the design intention or schematic idea, the piece is destroyed for its flaws. These deviations are character elements, however, disrupt the flow Figure 2 of an to-be owner's expectation. They expect consistency and exactitude, because they have been treated to it before.

FIGURE 2: LACK sidetable, IKEA

Exterior materials are marketed by the effect they create in the owner, such as 'birch effect', not for the integrity of wood. As a natural material, wood is inherently unique. However, when the image of wood texture, which is only learned through the engagement of actual wood, is repeated and duplicated, the authenticty of the particular piece of wood is comprimised. Buyers go to stores with the intent to purchase a piece that possesses the likeness of wood and the likeness of the 'home-made' piece. In reality, actions such as this are the acceptance of likenesses and discredit of authentic objects.

#### JONGERIUSLAB | HELLA JONGERIUS

longeriusLab is an internationally recognized design, art, and installation firm founded by Hella longerius and located in Utrecht, The Netherlands. Her firm focuses its design efforts on the commentary of the imperfect in the process of mass-production by incorporating what they call the 'misfit'. This misfit is the rejected or discouraged aspect of mass-production; analgously my 'imperfection'. The misfit is intentional; a mis-stitch or unregulated one-off color dye blends across thousands of identical vases (IMAGE #). The commentary goes as far as to use this after-production application of a subjective quality in the overall design of the piece or installation. The application of 'imperfection' can be viewed as a decorative treatment that overall is thematic, image 15: Colored Vases, 2010 however, does not take the subjective quality as the sole point of ignition for new design. They maintain both sides of the discussion in the same piece, but the distinction becomes blurs. In 2010, her publication, "Misfit", was released.



#### **GEORGE NAKASHIMA**

George Nakashima was a mid-20th century architecturallytrained Japanese-American woodworker, whose practice is continued today by the individuals he directly trained. Nakashima's inspiration came from the inherent characteristic of wood, where two pieces could never be identical. Automatically, he understood anything he made, regardless of if a previous piece looked similar, the natural quality of the material held the uniqueness of each piece.

He was also exceptionally careful with the selection of the wood used. His concern for the immaterial past of each piece of wood brought full-circle tranquility and Eastern zen. Each detail, hand-made, enhanced the uniqueness of a piece. image 16: Conoid Bench, 1966 The bench in IMAGE # was wide enough for a seat, hence, the qualities he was presented with dramatically influenced programatic questions. As a craftsman, took pride in presiding over decisions such as function.



image 16



## MAISON DE VERRE, PARIS FRANCE | PIERRE CHAREAU, BERNARD BIJVOET + LOUIS DALBET | 1928-1932

Maison de Verre is a residence in Paris, made completely by the hands of craftsmen. It comments on the relation between many-off and one-off production through its material choices and installation methods. Assembled of mostly steel and glass block, as was common in the Early Modern Style, it is constructed to embrace the booming industrial movement and the realities of deviation that accompany it. Each glass block on the facade is a one-off piece, produced multiple times, with the intention that differences between two will be noticable. This visiblity of natural qualities is referred to as the honesty of material. Its overall transparency lends to the idea of honest and unhidden stability and hence, intellegiblility of its intended expressed message.





image 18

#### **ROBERT RAUSCHENBERG**

A mid-century American artist of the Assemblage Movement, Rauschenberg saw beauty as a direct result of process. His ideas were inspired by the Renassiance author Leon Battista Alberti's writings on the concepts of beauty: "A work is finished only when nothing can be added and nothing taken away except to the detriment of the whole."68 His mixedmedia installations engage three-dimensions, for they reach beyond the surface of a canvas into deeper aesththic meanings and visual messages. He intends to draw attention the the frame, making conscious the framing structure and the "notion of a frame as a boundary between the picture and the outside world - an aesthetic threshold - has to give way to something more complex."69 The becoming of something did not occur until the process of creation was underway, where the potential of changes throughout the making, spurred new directions. "It seems to open itself up, to face us with an extraordinary frankness, yet leave us suspended, asking questions and looking with enhanced vigor."<sup>70</sup>

IMAGE 17: Maison de Verre

IMAGE 18: Allegory, 1959-60

IMAGE 19: Wall Street, 1960

# mapping: unfolding standardization

### Aspects of Making Many-off:

**CERTAINTY:** The product has a pre-determined outcome before the making process begins, both in schedule of stages. set roles and boundaries for the maker, and expectancy fo final form precision

**REGULATION:** Restrictions and tolerances required to achieve virtually identical and visibly indistinguishable piece are extremely tight.

**CONSISTENCY:** Human dexterity is no longer capable of meeting the high level of indistinguishability expected.

**PREDICTABILITY:** The resulting actions in making do not occur during making and can be calculated prior to engaging a material

AUTHENTICITY: Replication attempts to copy existing forms in an overly controlled manner. Thus, the authenticity of one item cannot exist.

Understanding the making process is the first step in analysis of the two fundamental methodologies. The process of mass-production can be calculated, precise, and projected. Often, industrial designers can approiate exact hour calculations the are often expedited. The chart at the right depicts a framework and schedule for a to-be massproduced table over a standard 35-week time period, with each stage proportionally uniform to the development and production of a similar item. Mass-production standardized the temporal component. This section attempts to dissect and reorganize the instution of mass-production, particularly how our experiences and expectations are not the same





Creating a mass-produced table is so rigidly certain that stages can be planned and mapped to the hour. This graphic charts the portion of time allotted by a major furniture design and manufacturing company in Grand Rapids, Michigan. It also charts the week that particular task occurs and what tasks can be expected to overlap at a given point. 35 weeks is an industry average for the complete production process, from draft board to delivery truck.

phenomena.



discovery or intellectual challenge, the mental separation meaning devoid. The monotonously bland existence adds to the belief that inevitable occurrences of chance can be conquered by man, should be scrutinized, and ultimately witch-hunted until extinguished.

HIERARCHY The diagram spanning pages 38–39 depicts how any created objec possesses two sides, the subjective (unique or unapparent) and the objective (apparent and measurable). From the unapparent (less obvious) side, the immaterial aspects can be read and interpreted. These include aspects such as rationale for choosing specific tool and schedule. The role of the maker can be dissected here, too, further unfolding an understand the key differences between craft and mass-production.

1949

material





IMAGE 20 [Left]: This image is a Cubiststyle fusion of multiple experiences and perspectives into a simultaneously expereinced table. This table is wholistically experienced, expressing the dimensionality and knoweldge that engaging a three-dimensional object adds over a two-dimensional representation or perspective appraoch prior to engaging.

IMAGE 21 [Right]: This image combines multiple elevational perspectives to give a truer-to-experince chair. The concept 'elevation' is intended to remove depth of a ground-level view. This chair moves down sequentially and thus, comprises a series of elevations simultaneosuly.





FIGUE 5: UNFOLDING EXPERIENCE This composition and exploded sequence is influenced by the approach of artist David Hockney. The mind works with fragemnts of expereinces and memories of the tactile world. The hand contains dense layers of knowedlge and accute sensitivities tranfered via touch. The composite image shows the minds defragmenting process from experience, where certain instances are more clear or crisp, while others less significant and faded, yet critical to the experiential memory of the whole. The tables were used throughout the study.





**RECONNECTING IMPERFECTION:** These two images are of a old rocking chair that has been impacted/deviated by wear and tear over time, and is nearly completely broken down. The fragments are of points where connections have failed due to the chair being used and possessing a life of it's own. These were related to each other by positive-negative space of images. The image to the right has the vectoral concept of inflection added in red. Two nodes do not create the line, instead, the line follows significant forms in each fragment.

1000





FIGURE 6: The following series (p 54– 60) demonstrates the imperfection mapping process of both side tables, as well as an applicaton to another type of furniture. a chair.

#### **MAPPING INFLECTED IMPERFECTION**

Constructivist thinking believes a learner builds his or her own knowledge based on his own lessons gained from their individual experiences and relationships. "Each learner has a unique representation of knowledge formed by constructing his or her own interpretations to problems and ideas."<sup>71</sup> Attempting to make implicit, subjective information communicable visibly can be done through a mapping process. "A map is achieved when a meaningful structure has been created."<sup>72</sup>

Think-maps are a constructive method of making implicit cognitive and experiential information explicit. They represent knowledge, as well as serve as analytical tools, emphasizing relationships forming a structure of organization during and after their creation. This type of mapping exploits cognitive actions of a situation, decoding knowledge in a manner that "makes it readily accessible and useable."<sup>73</sup> The abstract maps act as a "bridge between the conceptual and the physical and thus provide a basis for exploiting the conceptual knowledge."<sup>74</sup>

Inflection, according to Bernard Cache, is a vectored direction that every action or marking possesses in a surface. It can come in the form of curvature (convexity and concavity) or linearity, but is not entirely visible. Instead it is dynamic and temporal. Linearly inflected direction was employed for the table assessment. The lines "demonstrate and facilitate meaningful learning"<sup>75</sup> as well as empower the imperfections quieting normally communicated ideas of mass-production. They "let other voices speak [visually communicate]."<sup>76</sup> Using the markings are the nodal points, their shape as informer of direction, the lines represent the freeing of embed energy.

The vectored organization set up a hierarchy of emphasis, with some lines visually dominant while others recede to a series of background layers. Often, as was the case until inflected, the structure "is not something of which we are naturally aware."<sup>77</sup> Each table produced a unique structure or code of inflection.



MAP COLORS: The green ovular markings in the illustration beginning Figure 6 (p. 46) indicate the general shape and direction imperfections tactically discovered in one of the tables' in the surface. Blue is indicative of inflections on the three facing sides of the table (front long, front short, and top) illustrations, while the pink inflections occur on the 'hidden' or remaining other three sides (rear long, rear short, and bottom). Dark blue and orange represent the markings of both tables simultaneously in further detail, transposed on top of one another. (p. 52)





























## table deconstruction

In attempting to understand the process of making, one must understand how something is made. The scale of furniture is appropriate to examine the life of a made thing, for it is small enough to regularly contacted, yet large enough impede spatial motion. Buildings and vessels are both too large and small, respectively for a brief study. Kimberly Dovey notes "At the level of furniture, people may be concerned with sitting, dining, talking, and so forth. Space becomes increasingly conceived as well as percieved."<sup>78</sup>

The two mass-produced side tables examined are seen in Image 23. Their likeness to one another perceived by the insensitive eye would be identical in nature. It was not until their previous owner no longer wanted them and discarded the two on the side of road for rubbish that I ran across them. I have no idea who owned them or the story that occurred to their making prior to my salvage.

To dig into the tables, I followed the rationale of empowering the inflected lines. Certain lines dominated my interest, so respectfully I let my fascination guide which lines were chosen to cut. This cutting I termed pathological section sawing, as I dissembled the table. The mapped lines opened my eyes to the quality of the wood beneath the surface in a way I could never have anticipated, for the dynamic angles and directions often posed a challenge for the saws. As I broke the veneer surface, the covering pattern did not reveal the honesty of the material. Almost all the veneer appeared to have similar pattern, but there were five different types, including grain-less particle board within the table.

The sequential deconstruction in the following section was guided by the imperfect inflection lines of the most dramatic emphasis.

































## **Conceptual Models**

Making things reveals to us aspects about ourselves that we had never before seen until new relationships are formed from a meaningful structure has been achieved. These following three objects serve both as conceptual models and functioning objects simultaneously. It is in the making of the group as a whole that lessons of my intention became visible patterns, expressing behaviors, decisions, judgments, or consistency of ideas. One object cannot provide enough basis to critically realize patterns - meaningful structures that exist.

'Serving tray' was not the first project started. It was the second to 'hand plane', but first one to complete its creation process. Finding the origins of a thing is challenging, for other than 'necessity' as a starting point, what rationale is there to decide what functionally to build?

I was in need of tools to hand-work a material. So this became my starting point. So I questioned what if I could make unique objects by hand objects made of unique tools built also by my own hands? How much more impactful would the final piece be, if it was two-fold handmade? I then attempted to create a simple tool, a hand plane. My first attempts conformed to the image of hand planes I had seen in the past and struggled because I needed more tools than I could have possibly made myself. It became self-defeating because I strived for a product that was not ideologically of my own origins. It originated from likeness; I was falling prey to the trap that was likeness and overlooked my accessibility to images of hand planes in the past.

Therefore, I realized I must remove program and work simply with material, as that material. The introduction of a function to serving tray did not occur until after its production, yet the qualities innately visible in the material alluded to its programming. These are the narratives of their making.



### [I] SERVING TRAY

The 'serving tray' was the first project completed. It began by using salvaged scrap steel from a laser-cutting industrial process extracting quarter-inch thick discs 3-inches in diameter. This was intelligible by the laser insert markings leading inward and shinning burn inside the circular voids.

The angle that the insert mark left was consistent throughout every hole. This was the part of the original process the manufacturer wanted to hide, a flaw of the machinery in their eyes, but what I found the most intriguing, similar to how I viewed the tables. The concept of laser-cutting is to sever, to cut and remove. Therefore, building off and following at the angle of the cut-marks, I extracted a significant portion.

The perimeter of the extracted piece followed the lines leftover from the laser-cutter, but the interior remained untouched. That is until I tried to fold the steel. I saw the steel as a thick paper, purely surface, and potential in manipulating it like origami. If I could fold the flat surface into dimension, a cutting metabo, vicegrips and hand grinder. then I could bridge the geometric space into lived-space, and create a meaningful item.

I began to score with a grinded the longer lines upon which to fold. I started with the first ring markings within the perimeter, and folded them, maintaining the border quality. The exterior fold them seemed to grab and fit comfortably into my hand, and the weight was appropriate to carry. I began to see function infuse itself into the form I had just created, with the ability of a serving tray, cup holders and all, folded from forgotten steel and inspired by marks another process ultimately neglected."Looking for a way to describe our amateur's relationship [to wood], two words come to my mind: one is curiosity, the other is chance."79

I questioned what might other programmatic qualities a different material might hold, if I search for the unique and quieter details of its particular making.



FIGURE 8 [Above]: The original piece of laser-cut steel remnants from another industrial process prior to my actions [left]. Remnants following my actions to cut along the laser insert marks at the circle edges [right]. The altered sheet was quickly folded producing nothing quickly and set aside as unusable (for the apparent time).

68






Knowing what I had learned from 'serving tray' and the table FIGURE 11 [Below]: Tools used in making this project included (from top about searching for the imperfection, I stumbled onto a bent vicegrips and hand grinder. metal strip. There were very few nicks or markings other than those nearest the bend. These indicated the piece was originally straight and had been manually manipulated with a vice and hammer.

I began to use the same technique of bending with a hammer. The size of the vice gripping surface limited the bending radius that could be achieved. After several bends, the first piece found its way to my hand and fit comfortably. Quickly I realized my hand plane could resurface, if I folded a second





In the first attempt to make a plane I worked wood in ways I had already seen and remembered. This plane originated without an image previously in mind, and a simple set of qualities that would prompt the use of hand planing: 2 handles approximately a foot apart, enough weight to keep it level, and a blade. This item had all these qualities after a few simple welds and bolt holes to remove the blade for sharpening. It is slightly impractical, however, in order "to make an object that is simple, practical and pleasing... sometimes the objects I make border on the nonfunctional, the function being of secondary importance."80





FIGURE 10 [Above]: Phasellus tortor odio, convallis sit amet, consequat id, eleifend vitae, lorem. Proin vitae nibh. Nulla velit felis, condimentum sit amet, luctus eu, auctor ut,





#### [3] HATCHET

The third and final model in the conceptual phase began with a piece of oak cut from my backyard nearly 6 years ago. It was the length of fire kindling and ultimately the perfect length for a hatchet handle.

In this model I attempted to test the study of imperfection on a second material, to see whether the same analytical method could be applied to a wider variety of substances beyond just metal.

The oak had two large knots and a smaller diameter shaft between. This fit decently into my hand initially, and almost exclusively to my hand by the time I concluded the carving, chiseling, and Alaskan planing it.

Having practiced making blades in the plane, I felt confident to step up to a thicker piece of steel. I purchased this piece with the intent it would be used for the blade so searched for the most appropriately shaped and hardened piece.

Sharpening and grinding the steel, and drilling out the attachment required research into precedent hatchets. Creating durable connections between two strikingly different materials at a forcefully-loaded joint is not an easy task. It required constant edit to both inner metal and wood surfaces, and a tight friction fit that will only maintain its tightness until the blade head is removed.

Determining hatchet function early on made decisions after selecting the wood attempts to match construction and attachment methods I had already seen. I realized the hatchet followed too many precedents, though practically effective, I had seen. I was building from a rough mental picture, but nevertheless, from the likeness. An image was in mind almost before the project began. In this way the hatchet is more 'decorated' by imperfection than the previous two models. I felt a deeper fusion of inspiration to manifestation, made the earlier works stronger, evident in the next constructions.















## constructions inspired by impefect inflections

The thesis looks to find ways to analyze a material given the immaterial markings from its past life situations that made it particularly unique and attempts to empower the immaterial beyond simply decoration or thematic style. Empowering the immaterial beyond a treatment requires strengthening the bond between the initial analysis and the final form at a level so intimate, the results care only possible with the help of the imperfection. These markings are not passive; I must develop myself to become hypersensitive.<sup>81</sup>

The mapping analysis preformed on the twin side tables prior to their deconstruction explicated a implicit process of increasing my sensitivity for the imperfect marks of the immaterial and subsequently informed path to which the pathological sectioning would occur. This bond between surface and substance is the level I wished to achieve in my studies to follow, though changing medium did require small shifts in the methodology. Inflecting the lines is like painting the wholeness, similar to "an invisible affirmation of what was already there."<sup>82</sup>

The materials chosen to begin are not reused, but in need of refreshing. Their life continues in new light and should be celebrated. Any programming in the following pieces follows the thoughts of Robert Rauschenberg. It is not until the process in fully underway and "completion is implied by a self-contained organism whose internal structure set it apart from 'life' or 'contingency' or the 'world'."<sup>83</sup>

The following constructions are narrated from my perspective, as the conscious maker, and their process emphasized over final product.



pieces started earlier. Of particular note, the "Leftover Material" from "Serving Tray" took 6 months before the crawling process regained noticeable speed.

# project [1]: FULL-MOON HUG

"Full-Moon Hug" started as a discarded fin-tube wall radiator cover left in a scrap yard snow pile. The unique perforated surface profile was intentionally bent, and following my previous folding of metal, it felt an appropriate material with which to move into the larger design study. There were areas where water had rusted the steel before the paint peeled off creating a tree-ring effect, capturing time in thin bands.

Taking inspiration from the vectored inflection once again, I analyzed both sides for imperfect markings, obliviously occurring once the cookie-cutter piece had left its stamping and painting manufacturing line. The lines formed a dense structure, more dense than the table. I continued the same destructive logic of following lines that caught my interest in the hierarchy. I considered these voices to be the leaders of quiet details.

After cutting and brute force folding over the edge of a steel table several times, the piece still did not suggest programmatic possibilities nor a did it possess a single, firm 'base'. The repeated bending strengthened the steel, mandating torch heat be applied to make the steel malleable. The heating melted the plastic paint or left burn marks, honestly speaking to its creation narrative. It was a razor-sharp calamity of spikes. Not until the solid portion began to wrap around itself, forming a cradling enclosure, did functional inspiration dawn. This nest seemed to desire sheltering and shading while the perforations could spill light.

The bolt holes in the solid side of created perfect connection points for a hanging mechanism, also salvaged.





image 25











THIS PAGE: The original bolt-holes invited the opportunity for a connection linking multiple holes. In doing so, a hanging action presented itself.





Project [1] | Full-Moon Hug











Project [1] | Full-Moon Hug





LEFT: The original boltholes linked

LEFT: At this point in the folding process, an opaque basket formed. This created a spatial 'craddle' and invited another substance to fill its void. A source of light was chosen to permeate through and around the preexisting fenestrations. The sandstone like rust ribbons can be seen.

**RIGHT:** Bending method



RIGHT: Splayed but wrapping tail of the shade



### project [2]: FANNING HIS ROYAL HIGHNESS

"Fanning His Royal Highness" is a piece created from an electrical panel door reclaimed from the same yard as 'Full-Moon Hug". The door's muted teal and twin rectanlinear grates anchored by a square void in the middle caught my attention. This was a piece that had deviations in the surface sinilar to the radiator cover- rust and ripples.

Once again following the method of linear inflection of imperfection I mapped my experience of sensing for unique immaterial details. The resulting reation of lines was more than 3:1, indicating the outside face.

The bending method followed the established procedure set forth in "Full-Moon Hug", minus the heating. Attaching "Fanning" together required welding, for the thinness of this electric panel door created a great amount of torsion flexibilty, though it still oscilates after being touched.

After folding and cutting, a bottom defined itself, and the opposing end did not support much in way of programmtic possibilty. Two lips appeared like hands, wanting to hold. I saw this a an invitation to introduce a second material, and chose one that would not detract from the magnificence meaning I felt was expressed in the lines, and used a salvaged piece of glass.





**IMAGE 26**: The mapped lines on what was the inner face of the panel. Blue indicates the imperfection and red the inflection.



IMAGE 27: The mapped lines on what was the outer face of the panel. The density is far greater here implying more interaction. Blue indicates the imperfection and red the inflection.













**RIGHT**: Bending mechanism







ABOVE: Spatial formation. Moments like this raise questions of the boundary between architectural buildings and simply architectural space.







ABOVE: Unknown program

ABOVE: Welds added for stability



ABOVE: At this point in the folding process, the lips became situated so to invite a foreign material.



#### project [3]: BACKWARDS ROTATION OF THE NINE-POINTED NINJA STAR

The rear dryer panel that was chosen for this project was the largest piece of thin sheet metal used. This was the first piece, though, to come with a large post-manufacture imperfection. The large dog-ear fold came as a result of a screw striping its hole. This piece also had hundreds of uniformly spaced holes and a square to attach the vent tube.

The vector-application of immaterial markings was created on both sides once again, as was the cutting and folding method. Welds on this particular paint burned quickly and in intensely emphatic flares. There was an additional rule of engagement for this project that had not been included in others. Before I chose the first line, I chose to fold all the lines as the ridge, the outer point. It was not until I broke the rules on the final fold, folding the line into crease, that any sort of program became visible.

In this piece, I wanted to test the idea of the second foreign and pure material earlier on. It was not until a seating size and quality arose, did I see the ability to use concrete as mass. I simply filled the void left by the metal using the steel as a one-off mold; with some of the steel actually embed in the poured concrete. This one-off mold raised another question: how can we transfer the immaterial stories from the material? Can we mass-communicate a unique story in a still unique manner, keeping and respecting the metal's authentic narrative?





IMAGE 28: The unpainted side of the dryer panel. The dashed lines represent the mapped inflection, while the red ones are the actual imperfection marks.







This piece had the most intact paint coating of the selections. Therefore, deciphering important markings from less significant ones became which ones were deepest. Scratches in just the paint were not significant enough unlike markings that, whether the paint was removed or not, would be ingrained. This distinction became important because the quantity of lines would have become so dense, the organization would have been of uniform intensity and finding a direction to start may not have been clear. It was a question of what surface I was most interest in - the first engaged or the substance - and the substance was ultimately more fruitful.



































LEFT: At this point in the folding process, an interior condition, a size conducive to my body formed, once I broke the pattern of folding over the lines, and instead the line into the crease. This was the last fold.

> **RIGHT**: The weldmarks created by burning paint create visible and painting-like strokes on the surface. The weld was actually tacked from the opposite side. These designs only appeared on the rear of the touch.











RIGHT: Formica molds were readily availble and provided an extremely smooth concrete surface.









LEFT: Duct tape was used to avoid water leaking out. **RIGHT**: The concrete had to be handed packed through a small opening in the front corner, which was evident by a crease that formed











LEFT: Removal of the mold forms



LEFT: The forms followed the angles and contour of the steel changing directions RIGHT: Expressed corner where concrete was filled by hand under the steel







# project [4]: FLOWERS

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"From the mold we move toward modulation"

~ Bernard Cache in "Earth Moves"

The molding of "Backwards Rotation of the Nine-Pointed Ninja Star" brought up a new question: Can impressions of the immaterial become three-dimensional and not just as post-making decoration? Can a unique narrative be authentically replicated?

This project was intended to make duplicates, to comment on a role of mass-production. The steel was of no identifiable past function, but when mapped, cut, and folded possessed vase qualities. This prompted the question if an exterior (steel) surface produce an interior surface (on concrete) and be able to keep the mold for at least a second time.

Forms were constructed away from the steel, encompassing one half at a time with aspirations to reconnect the two sides together and make a complete container, with the inflected embedded. The three-dimensionality of the vectors was created by hand-caulking the lines. A coat of petroleum jelly and duct tape to avoid two lips embedding in the concrete were added. The forms were made so the holes would be identical for the subsequent repetitions to be as close as possible to each other. Both halves required some effort to remove the steel mold from the concrete.

Once both sides were removed, the slight variances in mold angles and shifts from concrete force did not align the intended edges. They seemed to not have any use, and were set aside.













RIGHT: The vase quality of the folded steel can be seen here, as well as the two lips on the right side that had to be duct taped to avoid being embed in the concrete



RIGHT: Threedimensionalize the lines with caulk






















LEFT: Coating the steel in petroleum jelly allowed the steel to be easily seperated from the concrete however the form of the mold made removing it challenging RIGHT: The top side of the concrete is clearly visible once cured. The imperfect smoothness defines it easily.











**RIGHT**: The second half included a top slope, a large impression and a partial top mold. This partial mold peeled off in patterns that even showed its past immaterial story as a student desktop.

























































# project [5]: SLUMP

Slump takes into consideration the three-dimensional concept added in "Flowers" and builds off it. It also expresses when I questioned my own role in making things imperfect. To this point, I had only looked at materials I discovered that others had used and no longer found value in. I decided to return to a material used months before. The remnants of the serving tray that had been folded and discarded for lacking my characteristics matching its 'bench' potential to my mental image of bench-likeness was created by the huge gaping void in the middle. I had viewed this hole as a flaw, something I was trying to adamantly opposing.

Therefore, combining these two concepts, the void was extruded solid. Using cardboard tubes approximately cut to the diameter and perimeter of the holes, the curves of the remaining circles would be expressed. The intermittent spaces were then duct taped over and together to avoid seepages.

In pouring the concrete, I underestimated the quantity required to fill the entire height to embed the steel as intended multiple times. This forced me make multiple trips for more concrete, during which the already-poured mix was able to dry (ultimately expressed in a distinct layering effect). In addition to the underestimating, the elapsed time allowed the cardboard to give way horizontally and spread laterally. As more was added, the wider it spread, and never was able to make the last two inches. The metal was then set aside again and the slump remained solo, making another opportunity to tell the steel's narrative.







IMAGE 29: The bent steel remnant with large hole in the middle. This is not easily conducive to sitting.



image 30







LEFT: The steel semicircles were extruded by the cardboard tubing, accentuating the imperfection and the part of the narrative I played a part in altering



**RIGHT**: The slumping did not let the concrete reach the top. The steel was not embedding because of lateral thrust and nature of cardboard to absorb water and the duct tape to tear under pressure and weakening tackiness and with water.









ABOVE: Layers created from running to the store several times creating a timeline of actions.





Project [5] | Slump



LEFT: Point of apparent lateral thrust on the cardboard leading to seepages





## project [6]: FLOWERS KEPT IN WATER

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"Flowers Kept in Water" is second use the folded steel 'vase' to cast impressions in concrete. The same piece of steel and frames were employed, connected with at the same points.

The first half fit tightly, not comfortably like the first round. I discovered it was due to the warping of the steel in prying it out of the second side of the first round. Even with my careful control and regulation, the second casting would be slightly different.

The second side of this round was a near debacle. The petroleum jelly from the first round stopped the duct tape from adhering tightly enough to hold the concrete in. The gaps were larger too, because of the warped steel. These caused a few large spills and mold adjustments. The largest challenge came when the inset duct tape covering the two lips broke during curing. There was no way to remove the steel without ruin the casting; therefore I was forced to hack the steel free. This left a steel scar, which when positioned next the first casting helps visually explain better how the large inset was formed.

From afar and apart, both sets looked similar to their counterparts. However, it was not until both sets were directly compared did the significance of the deviations between the two was apparent. The differences were as drastic as the mappings between the two deconstructed tables. Every angle, dimension, and height differed, as did the second side's partial top mold impression [right].









LEFT: Washers were inset in the top of the first half's second casting to identify it, in case there were no other signals or the variances were too small to detect

LEFT: Side 1 was cast in both attempts with the mold base elevated on steep angle using gravity to aid the in the eventual removal of steel, so it would not be pressed against it so intensely RIGHT: This round produced an extra lip from seepage on the other bottom edge instead of the crispness of the first.

RIGHT: However the concrete was able to reach the bottom in the second rendition, not the case in the first.







ABOVE: Overhanging lips that eventually were embed into the concrete because the petroleum jelly residue impeded a good tape-steel bond like the first rendition.







ABOVE: The gaps and petroleum jelly challenge created multiple time where the mold had to be mended to contain the concrete. Major leaks occured repeatedly.





ABOVE: The moment I noticed the steel was embed and not simply snug to the concrete.











ABOVE: The scar from the steel cutting. The duct tape remains to keep as honesty and upfront about the process as possible.

ABOVE: The steel mold was completely deformed to a degree it could not make another casting similar enough for comparision. And it is coated heavily in petroleum jelly, which is not eav to remove and not flamable unless heated beyond torch capacity.





Project [6] | Flowers Kept in Water



### project [7]: SPRING TORNADO IN OKLAHOMA

"Spring Tornado In Oklahoma" takes multiple ideas questioned to this point. They include: three-dimensional inflection, reuse of a material I altered, and many-off communicating a narrative of imperfection.

The table components were set aside once the deconstruction concluded. I did not know what to do with them and after conceiving them for so long in a static use, as components, they resurfaced. Taking the three-dimensional extrusion studied in "Slump" as inspiration, the pieces were re-stitched along lines drawn that were not used for disassembly. These less empowered lines originally were given the chance direct the flow the reconstructions.

The lines were extruded with fishing line and bolts in a tension-compression type detail. Two surfaces are now in facing dialog with each other, brought together by the same power that influenced my dismantling approach. Both pieces speak in their assembly to the manner which the table was disassembled.



m/

FIGURE 14: PATHOLOGIST'S TABLE The pieces blown up from the table are ones of particular interest to me. In one or two simple cuts, the truth of the material is easily visible and known. Many different types of wood were discovered in one cut that otherwise would have been unexposed.











RIGHT: Even drilling for the fishing line and bolts educated me on the material I had not yet known, such as this corner is a 3" solid piece of wood at this location, requiring a larger drill bit.









ABOVE: Stitching together required testing of tension materials. Normal wire was too brittle. Piano wire was too strong and had a high pinch memory that made it difficult to pull and make tight radius twists. 45-lb test muskie line had the ideal strength and the ease of sewing. I used a make-shit needle with an hook instead of an eye.





ABOVE: Once the fishing line was woven, I tighten the nuts stretching the line taunt and solidifying the connection











### project [8]: CONVERSATIONS AT THE HOLIDAY BARBEQUE

"Conversations at the Holiday Barbeque" brings together the two modular projects, "Flowers" and "Flowers Kept in Water", and attempts to sew them in a similar manner to "Spring Tornado in Oklahoma".

I compared and subsequently rearranged multiple times the four pieces of concrete that emerged from the previous impression-surface studies. In doing so, I found I could connect the concrete along the lines that were formed by the 'vase's' impressed inflection lines, connecting two otherwise unrelated surfaces. This linked all four pieces together.

To accentuate the differences in the poured pieces, which I found fascinating, I emphasized the more vertical angles with steel rebar embedded and extruding. The manner that these protruded suggested an enclosing space, so I proceeded connect the two sides. The horizontal members follow the angles of the horizontal edges of concrete.

To visually emphasize the idea of coming together of two separate projects, the concrete sits rotated 180 degrees, with its partner run adjacent. Because they are not directly visible, the angle of stitch-bars in the concrete is expressed above by the angle of the repeating bars. The steel is welded heavily to maintain honesty.





ABOVE: The comfortable configuration pits both sets in opposite direction of one another



ABOVE: Stitching together with steel rebar. The holes go from one line to another.









ABOVE: The steel rebar accentuates the rear angle that was significantly different from its side one counterpart







RIGHT: These smooth bars express the direction that the lines beneath it in the concrete are drilled and the rebar stitching them together



**RIGHT:** welds











### project [9]: GREASE PAN UNDER A SEDAN

"Grease Pan Under a Sedan" incorporates the reuse of the hacked-up 'vase' from "Flowers" and "Flowers Kept in Water". It is the unfinished piece in the project and will continue to drip slowly until it finds potential program.

Once I had to employ a blade on it I could not stop. The manner of extracting the steel seemed poetic in how it should be reworked. Therefore, in a similar manner with which I approached "Spring Tornado in Oklahoma", using the lines that were not used to fold or cut initially, I disassembled the 'vase' structure into several pieces. The remaining unused lines on the pieces were then drilled for threading.

A few simple welds the lines adjoin later, it waits threading and program.





Project [9] | Grease Pan Under A Sedan





RIGHT: Even if the line was not one direction it was still capable of being cut, such as this small inset. This was the first cut of multidirection, and inspired more ambitious cuts later.







Project [9] | Grease Pan Under A Sedan









## project [10]: FIVE TREES AND A NAPPING DOG

"Five Trees and a Napping Dog" is the tenth and final project for this thesis. It brings the laser-cut steel remnants of 'serving tray' and "Slump" back for a third and conclusive time.

In "Slump", the attempt was to add an obnoxious amount of concrete mass in the form of the void imperfection I created. The three-dimensional extrusion of could be retained, thus, "Five" attempts to reduce the sheer volume to five embed columns.

"Five" also takes the material studies of stitching the wood and steel together and attempts to stitch concrete 'cakes' together in two directions, forming a mesh like fabric. Each 'cake' was individually formed and varies in height, and represents the space of one laser-cut circle. The image of the whole steel sheet returns in an inverted light: mass infill form. The stitched wire was substituted for encased steel aircraft cable, which was welded to the laser-cut metal. The open undercarriage allows for flexibility and can begin to conform to the subject engaging with it. The concept of flexible concrete is difficult to conceive of until an individual engages the material. But ideas of how to challenge materials to encourage engagement in manners that have no likeness seem to be where the prospects of this project lie.







ABOVE: Concrete tubes soon to be filled. I started with six, but one eventually broke due to air bubbles in the core.



ABOVE: Steelembeds aid the concrete in remaining joined to the concrete columns.



ABOVE: Individual cakes in their molds

ABOVE: Individual cakes out of their molds


ABOVE: Cakes being stitched. The washers between avoid corrosion of the concrete holes and when the wind blows adds an extra experiential effect.

ABOVE: The unwrapped columns showed the lines of the cardboard tubes, expressing their process.



ABOVE: Welds of the aircraft cable needed to barely touch the actual cable. Adding extra weld to the thicker metal superheated it to allow the cable melt to it first. Then welding the actual wire could proceed. If not, the welding amp would snap the cable. The light patches are the superheating of the galvanic coating on the top side.



RIGHT: Fully stitched and attached 'cake' mesh. The flexibility of the concrete mesh allows it to slope like a surface itself in many directions.









### conclusion

This thesis is as much an anthropological analogy to the creation of the indivudal in a mass-society as it is about building with architectural materials. Constructivist's might view people to be the most intimate objects a person can make. An individual is an intensely personal construction whose physicality is a by-product of their making. Woven so tightly, with our subjective narrative it is often difficult to seperate the two. It requires a dislocation of the self, moving the persepective into the eyes of another individual to see the physical markings. Due to this, there is a disconnect between preached ideals and manifest aspirations. Assuming an identity not your own is deemed fradulent, a lie of sorts, yet the actions are constantly repeated in fashion, music, religion, etc. True identities are formed in direct correlation to the artistic authenticity of craftsmanship, assemblage, fragmented experience, and uniqueness. Humans are impossible to mass-produce, yet science and society lead us that direction.

A growing fascination with masterful achievment of predetermined standards academically, fiscally, or socially lead to inauthentic individuals. These representations of a quiality life are the likenesses we see and desire. A picture of the individual is painted before life can take hold. there can be no likeness for an individual. 'Model' qualities can be viewed just as "Ninja Star" can be viewed in one light as a chair. They are gestural for interpretation and individually spun back to promote possibilities towards become a better person. The unique deviations in life make it worth living and the deviations in people make it exponentially more exhilerating and meaningful. Yet we attempt to regulate our experiences and will ultimately not learn all that is possible from the world, and this is a question of the method we employ to make oursevles. The way we make ourselves shapes how we deal with people or situations. Contriving, regulating, and pre-planning for cetain outcomes let reaction or dialog or didactic learning go unpracticed. We will know all before we engage in situations we will find ourselves, and missing the hidden potential because we are not sensitive to finding and empowering it will not spur new development or growth. It will be as cognitively numbing as line work. Robots can preform the physical actions faster, longer, and more efficiently than man. Man is redundant, and secondary to the tools we make. Eventually our tools shape us. Scientific tools are now capable to make the most precisely intended objects, human duplications. Ought we us them, if it takes away our most treasurable quality - one-offness? There must be limits and the immaterial messages embedded our material constructions - hands, skin, furniture, buildings - can serve as the tell-tale sign we are losing our prominence and the reminder that a substance of unmatchable quality lies beneath the surface.

Unfolding depth below surfaces can unveil a greater of uniqueness and make us better people. If we continue the existeniminmum approach, our own unique identity will be erased and purified in the same manner we treat our materials. The things we make can reveal to us things we never knew about ourselves. Let's look at the prominent narratives we have materialized for ourselves through making meaningless and forgettable architecture to see if in fact, we no longer or are going towards an end where people have meaningless existences. Made things today are manifiestations of cultural aspirations: absolute ends and criteria, duplications without one hand's involvement yet supposedly intended for the body, pristinely uniform and dishonestly bland surfaces, forgettable monotony, and easily neglected or expedited interactions. We will end up in purposeless landfills, ourselves replicated, outdated, and inefficent. What is going to be our story and where does our tale go or end if this is the preferred process? Our narrative might be more existentially dire than we are sensitively practiced to perceieve. Architecture in the service of institution is architecture in the service of man as he wants to see himself and to continue seeing himself and is a denial of the vehicle of becoming.<sup>84</sup>

Architecture can be understood as the conclusion of a journey, a destination, perhaps. More importantly, itself the journey and the narrative. Constructions are not simply assembled over night. By spanning time and assembling continuously, constructions are both recorders and recordings. Are we recording a silent story of our demise? A construction is alive to its future, but also filled and influenced by the richness of its past. In fascination with the only future possibilities, we shun the single aspect that makes potential possible, and that is the unique immaterial. We cannot lose it, or we will lose ourselves.



#### "I TRUST YOU."

Since the beginning of my graduate year, my advisor John Mueller would repeat this statement of faith to me. Initially it was excpetionally frustrating. Such few words lent so little guidance. Oftentimes, he would say it when I was least aware of my direction or unable to make decisions. In these moments when I had lost faith in myself, even in my confusion, his confidence was unwaivering. His choice of the fewest words were in fact the most meaningful. The less direction he offered forced me to find and light my own path. It is the affirmation that I beheld the illuminating source in my discovery that is the most empowering feeling a student could ask for. If someone can have faith in a person without evidence supporting their confidence, it encourages that person to trust themself, entirely.

# endnotes

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#### **IMAGE CREDITS**

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- 21 Chair: self
- 22 Rocker (no lines): self
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- 24 Twin Tables: self
- 25 Radiator Metal Panorama: self
- 26 Electric Panel Cover Panorama, Back: self
- 27 Electric Panel Cover Panorama, Front: self
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- 29 Steel Remnants: self
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- 01 Apple-to-Apple, self
- 02 Ikea Exploded, self
- 03 Times Table, self
- 04 Object Hierarchy, self
- 05 Unfolding Imperfection, self
- 06 Table Mappings, self
- 07 Table Deconstruction Sequence, self
- 08 Serving Tray Metal, self
- 09 Serving Tray Tools, self
- 10 Handplane Process, self
- 11 Handplane Tools, self
- 12 Hatchet Tools, self
- 13 Project Path, self
- 14 Pathologist's Table, self



#### **ABOUT THE AUTHOR**

An avid culturalist and traveller, Brian Richard Wisniewski was born in Detroit and raised in the nearby suburb of Garden City during his youth. For the past 5 years, he has returned to Detroit to stake primary residence, priding himself on opening others' eyes to the unique, one-of-a-kind spots that populate the City. In addition to Michigan and his Midwest roots, Brian has lived in Poland and Japan. He has held various positions in the construction industry and is always welcoming on a good conversation.

