THE MATERIAL VERSE
AGENCY OF THE INNATE

by

Matthew John Levy

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ABSTRACT

As technology advances, people around the world are losing, to a large degree, the material intelligence that once allowed humanity to engage and create from the world around them. In the field of ceramics alone more artists have streamlined their understanding of process and even the very nature of the substances they use daily, such as clay. I believe that by sourcing and processing local materials, if not indigenous to the area in which I live, Bozeman Montana, I can create works that speak directly to the landscape in which these materials are found. Further, by understanding the very chemical makeup of these rocks and clays I can develop ways to display these elements, such as copper, iron and manganese through installation art and utilitarian vessels.

Creating installation art made of raw, unprocessed clay and supported by internal steel frames, I sought to display the plasticity of clays along with their inherent weaknesses which are exposed as the materials dry and crack apart. In addition, I created modular tiles made from fused, crushed rock sourced from the area surrounding Butte, Montana. These modular panels and pavers speak to the latent abilities of refractory minerals like Silica, Alumina and Feldspar to melt at lower temperatures when combined together. Called a eutectic, this phenomenon is crucial for the creation of ceramic materials and glazes.

In conjunction with installation-based art, I have shared my understanding of materiality by “stretching” crushed rocks like granites and even man-made mining byproducts such as copper slag as glazes over utilitarian vessels. As a glaze the metals and other elements found in these materials create rich and vibrant surfaces, speaking to the landscapes from which they are found. Finally, in this paper, I will discuss how a deeper understanding of materiality is essential to humanity’s advancement and how the very agency that these inanimate objects invoke is larger than we perceive.
MATERIALS PAST

My first true tactile experience as a child came from handling my father’s collection of arrowheads and points made during the Archaic period by native tribes in the Poverty Point area of Louisiana. The chert stone objects were smooth, yet still visibly sharp even after thousands of years. Already I was fascinated by my father’s collection of rocks and minerals, from the beautiful banding of agate to the block of mica, which peeled apart in thin sheets, like little panes of glass. Each object displayed its inherent qualities, colors and textures, communicating its mass as I held each one in my hand. At the time I didn’t know it, but these arrowheads, or lithic points, were different from the rest of the collection. Here was evidence of humankind’s first true surviving example of the use of material literacy that shaped the civilizations of history.

The chert points were the end result of a mastery of material through observation along with trial and error. In order to be created, it was first necessary to observe the innate qualities of the materials – chert, obsidian and flint – rocks found in all parts of the world. These rocks are derived from the Silica Group, demonstrate the quality of conchoidal fracturing.\(^1\) This quality was then exploited by early cultures to make durable tools for everyday tasks like hunting, tanning and food preparation. Humankind’s ability to assess and access the qualities of the material world around them is a quality known as material literacy. But this quality cuts both ways, for while the advantages of conchoidal fracturing allowed for tool making in early cultures, the processing of silica-based rocks brought about the first “industrial disease”, silicosis\(^2\). There is historical evidence that even the first flint knappers suffered from the disease.

This duality of materials, how their inherent properties are both a boon and a bane to humanity as we seek to exploit their beneficial qualities, is at the core of this paper. Material literacy isn’t just about understanding the traits of a material that are valuable

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\(^1\) "a fracture with smooth, curved surfaces, typically slightly concave, showing concentric undulations resembling the lines of growth of a shell" – MINDAT.org

\(^2\) silicosis is an occupational lung disease caused by the inhalation of respirable dust containing crystalline silica. There are two forms of the disease: nodular silicosis and silicoproteinosis (acute silicosis). – CDC.org
for the needs of industry but understanding how the materiality of these objects has
agency outside our control, not to mention how being unaware of these qualities has
disastrous consequences. Everything on this planet has positive and negative effects in
relationship to humanity and our interactions with the world around us. For me I feel it is
important to see that the things we label as innate and inert are in fact capable of
immense impact and it is important to give materials the agency they possess, even if it
means assigning value to qualities that we can’t even see.
My work is driven by two generative questions: how can I, as an artist, capitalize on the ceramic materials, specifically their elemental compositions, to help make my aesthetic choices, and how can materiality be expressed within the confines of the gallery space? If these questions hold true, then can the raw materials act as a stage or vehicle for connecting the constructed forms to the land from which they originated? These questions are paramount to my obsession with indigenous materials and their impact on my practice as an artist. While materials are a way that I, like many other artists, connect to people and places, my goal is not to directly educate the viewer about material science. Rather, I am interested in the relationship that these innate qualities of indigenous clays and rocks have on my work, and the connections I can make between those materials, place, and the gallery. I wish to construct a conduit, a middle ground, that speaks to the raw qualities of these materials. The title of this paper, The Material Verse, refers to the materials of the universe at large, and the impact and agency these materials have on humanity as we seek to exploit their beneficial qualities. The term “quality” is defined as “the standard of something as measured against other things of a similar kind; the degree of excellence of something”, and “a distinctive attribute or characteristic possessed by someone or something.”

I will reference the latter of the two definitions throughout this paper, speaking of the attributes of specific materials like plasticity in clay, and the thermoplastic nature of rock minerals high in iron and feldspar. Understanding these qualities is at the heart of materiality literacy and how these attributes impact the aesthetic choices I make in my own artistic endeavors.

Another driving force in my processes is the power of inquiry and its role in the artists’ desire to truly understand and know a material through its manipulation and context derived through place. Tim Ingold, a British anthropologist, is a key purveyor of this “new” view on materialism and what he calls the Art of Inquiry. “In the art of inquiry, the conduct of thought goes along with, and continually answers to, the fluxes

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3 Merriam-Webster – merriam-webster.com
and flows of the materials with which we work. These materials think in us, as we think through them.”

Materiality has become a central focus in my work, a shift in the preverbal lens with which we look into the past and focus on how materials shaped the course of humanity. This move away from the anthropocentric lens, where humanity has been elevated above nature, helps us to understand how the world around us is a bigger player in the formation of society and how our actions have consequences even beyond our current comprehension. With this in mind, my relationship with rocks and clay shifts from a simple glaze chemistry dynamic and instead focuses on an understanding of place. Place becomes a recording, or mark of time, geologically and historically, where the history and culmination of the processes of nature intersects with the landscapes of humanity. The way in which we identify a material, a piece of nature or a physical fragment of this world’s mass, belies an inherent perception of worth: how does it relate to me and my intentions/actions/desires? Instead of a push to understand how materials serve humanity, I ask how materials change us, emotionally, chemically, culturally, all without our consent or control.

There is an inherent danger to simply handing agency to the world at large, and anthropomorphizing the innate objects and matter around us, more than that it requires perception and awareness in totality. Herein lies the paradox: how can we see something we don’t know it’s there? We are familiar with air, something we can’t see though we know it’s exists, but what of the things that exist beyond our scope of observation and awareness? This applies both to the “laws” of science and even how humanity can become the vehicle for hyperobjects like climate change and microplastics. If you look

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4 Ingold, Timothy, Making. Rutledge 2013 pg. 6
5 Anthropocentrism refers to a human-centered, or “anthropocentric,” point of view. In philosophy, anthropocentrism can refer to the point of view that humans are the only, or primary, holders of moral standing. Anthropocentric value systems thus see nature in terms of its value to humans – Oxford Dictionary.
6 Hyperobjects are objects which have a vitality to them, but you can’t touch them, like race or class, or climate change. Their effects may be experienced even if they cannot be necessarily touched. E.G. "ethics itself is revealed to be a hyperobject: a massive, tangled chain of objects lampooning one another through weird relation, mistaking their own essences for that of the alien object they encounter, exploding the very idea of ethics to infinity." - Bogost, Ian. Alien Phenomenology. 78-79.
7 Microplastics are very small particles of plastic material (typically smaller than 5mm). They can be unintentionally formed through the wear and tear of larger pieces of plastic, including synthetic textiles. They can also be deliberately manufactured and intentionally added to products for a specific purpose, for example, as exfoliating beads in facial or
at the way in which we shape the landscapes around us, one can see how humanity, particularly in the United States, has formatted the spaces we occupy into a form that is inherently human: the square, or cube. While the cube occurs rarely in nature, whether through the building processes found in igneous geological formations, or the deconstruction of the Earth’s surface through global weathering processes, it is the go-to for humanity. The cube drives how we build our dwellings and structures, how we package and transport materials, and in many ways how we break down and analyze the spaces around us. By making the walls of a structure flat, the materials necessary to finish these spaces can become streamlined and modular.

Having grown up in reoccurring construction zones as my parents fixed up the houses we lived in, I was exposed to a cornucopia of materials, both figuratively and metaphorically. After living in five different homes throughout my childhood, flipping houses culminated in the purchase of one of the nicest homes in Flagstaff. A two-story, five-bedroom, three-bathroom house sided in Navajo Sandstone and nestled in a property filled with pine trees. As a rock lover, I was consumed by the exterior surfaces of the home, marveling not just at the stonework (the house was sided by three Navajo brothers who had sole rights to harvest the sandstone on tribal lands) but the ripples and marks in the stones themselves, referencing geologic time and place. In my mind the sturdiness of the stone transferred to the house itself, bestowing with it the feel of durability and lasting presence.

In many ways now, we seek to apply the qualities of certain materials to the objects we create, a transfer of power, if you will. This occurs through the homes and living spaces we build and also the objects we surround ourselves with. With preference dictated by experience, we admire the qualities of wood and steel as they relate to emotional connections with the past and learned behavior. If someone grows up surrounded by antique furniture, aged oak, and maple structures their own personal tastes will be impacted by the environment in which they were raised. They might come to love

body scrubs. Once released to the environment, they may be accumulated by animals, including fish and shellfish and consequently consumed as food by consumers. – European Chemicals Agency, ECHA. echa.europa.eu
and eventually surround themselves with well-crafted wooden objects as a way of creating nostalgia and referencing inherited values towards craftsmanship. Or, they might have a disdain for such organic materials, seeing them as stuffy and dark relics of the past and favoring materials like stainless steel, referencing industry and modernity. Humanity tends to attach emotion to materials and subsequently the objects and even spaces created through them.
In the same way language restricts what the mind observes by funneling observation and awareness through perception, definitions and then categorical identification, creating objects often strips materials of their agency while conforming them to cultural stereotypes and norms. Objects and vessels have their own form and their own agency through intended function. However, is the relationship between the maker and material one of convenience and proximity, or something more profound? In trying to capture the indexical essence of clay, its fragile presence as encountered nature, there is a character to the material’s plasticity and mobility within the scope of the landscape. Clay is created through the act of erosion, an agent of entropy that occurs at every moment on this planet, and through deposition, these particles settle and capture a sense of place and time. Clays and their compositions reflect the rocks and organic matter around them, becoming a compilation of minerals representing “linear” history of the Earth’s tectonic and volcanic past. Clays are as varied and complicated and the lands around us, bonded together by the process of erosion and the innate qualities by which the mineral Feldspar, breaks down into a clay particle through the act of kaolinization.\footnote{Kaolinization refers to the alteration of alkali feldspar into the clay mineral kaolinite in the presence of slightly acidic solutions. Rain readily dissolves carbon dioxide (CO$_2$) from the atmosphere, promoting weathering of granitic rocks. As demonstrated in the following reaction, in the presence of carbonic acid and water, potassium feldspar is altered to kaolinite, with potassium ion, bicarbonate, and silica in solution as byproducts. \url{https://en.wikipedia.org/wiki/Mineral_alteration}\[2 \text{KAlSi}_3\text{O}_8 + 2 \text{H}_2\text{CO}_3 + 9 \text{H}_2\text{O} \rightarrow \text{Al}_2\text{Si}_2\text{O}_5(\text{OH})_4 + 4 \text{H}_4\text{SiO}_4 + 2 \text{K}^+ + 2 \text{HCO}_3^-]}

Feldspar, one of the most common minerals found on and in the Earth’s crust creates a situation by which clay, kaolinized feldspar, is found in every part of the world. It is also now postulated that the very beginnings of life on this plant began amidst the layers of decomposing clay and rock.\footnote{Cornell University. (2013, November 5). Clay may have been birthplace of life on Earth, new study suggests. \textit{ScienceDaily}. Retrieved November 17, 2018 from \url{www.sciencedaily.com/releases/2013/11/131105132027.htm}}

Venturing into the Montana landscapes and cities, looking for clay and rocks with which to make glazes, I have become entranced by the diversity of materials and the
ranges of texture and color. Given that this part of the continent has a storied history of volcanic activity and geothermal exposure, the variety of rocks, landforms and materials is immense. Every geological action can be witnessed in the borders of the state, from metamorphic alteration of bedrock, to instances of igneous processes brought about by volcanic magma, and the embedded time found in sedimentary rock. Here in Bozeman I have found material that began its “life” as igneous volcanic rock, weathered and cemented into bands of colorful shale only to be altered once more into rich plastic clays.

My task is to represent embedded time and energy that created these clays. Initially, as a utilitarian potter, the materials I used were just a stepping stone, part of the process necessary to create a final object. In that role, the focus was on utility and function, how an object created by one being is used by another. As I sought to represent the intrinsic qualities of these materials and the landscapes from which they emerged, it was frustrating to see them become obliterated through the processes of firing. Hues of magenta, lavender, crimson become red-brown in the firing process, exposed to the brutal nature of oxidized iron. With each step in the process, the work became more removed from the inherent qualities of the indigenous materials as they are found in the landscape. No longer could the clays speak directly to the place they originated, but instead became dependent upon narratives and educational props like informative posters and video documentation of process. by allowing the qualities of the materials speak for themselves, there is a stronger potential for connection between the viewer and the landscapes from which the materials originated.

With utilitarian objects, generally the first question is always, “What is it for?” or in so many words “how does it function in my space?” I use the word “my” because each of us observes and organize the surrounding world, by its relationship to us. It is innate, and survival driven, but also a quality born from one’s environment. So, an object’s meaning or function is derived from the context of the place in which it resides. Just how a mug has meaning in the context of the kitchen, its relationship to the space is direct and

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10 Once temperatures reach 500 degrees F, all bonded water molecules are driven off and the changes become irreversible, in which the clay has become ceramic in its chemical structure. Ceramic cannot be reverted back to clay without considerable energy and time, effectively repeating the process of kaolinization.
immediate, the same object placed in the context of a gallery space loses strength through context as its primary function or meaning has been removed. Or its meaning is transferred through a third party like conviviality or social engagement. So, for me and my practice, it became apparent that the work, as a response to material literacy and agency, becomes about the object and its immediacy in the space. In other words, where its function is derived from being itself, displaying all the qualities of the materials it is made from. In other words, the materiality needs to speak for itself.
Materiality promotes a fluid exchange breaking away from the binary pairing of idea and object and includes aspects of place and identity. Rather than some contemporary views that the idea takes center stage and the materials are left to be shaped through the will and skill of humanity, there is an emerging perspective that an awareness of material literacy is just as vital as the idea from which the object emerges. I feel that there is a dominate perspective in the contemporary art scene in which the idea is supreme to the material. In opposition, there are those who feel that one only has to look at the past with a different lens to see that material literacy was something strongly considered by past artisans. Ingold again stating: “To know materials, we have to follow them (...) In the act of production, the artisan couples his own movements and gestures — indeed, his very life — with the becoming of his materials, joining with and following the forces and flows that bring his work to fruition.”\textsuperscript{11} Ingold, in his book: \textit{Making: Anthropology, Archaeology, Art and Architecture}, advocates a way of thinking through making in which makers and active materials continually answer to or "correspond" with one another in the generation of form.

“The most powerful drive in the assent of man in his pleasure in his own skill. He loves to do what he does well and, having done it well, he loves to do it better. You see it in his science. You see it in the magnificence with which he carves and builds, the loving care, the gaiety, the effrontery. The monuments are supposed to commemorate kings and religions, heroes, dogmas, but in the end, the man they commemorate is the builder.”\textsuperscript{12}

Bronoski’s recognition that no matter why art has been made or who commissioned the work, ultimately the accomplishment belongs to the maker and the work is fundamentally about his or her ability to use materials and skills to communicate.

\textsuperscript{11} Ingold, Timothy, \textit{Making}. Routledge. 2013
\textsuperscript{12} Bronoski, Jacob, \textit{The Assent of Man}, Video Documentary Series, BBC. 1973
This idea is at the core of my practice, where materials, tied to the local lands of Montana, inform my aesthetic choices as I work with them to make utilitarian forms that both function as objects in the home and as references of the landscapes outside the home. Each material has innate characteristics defined by qualities like chemical makeup to workability factors like plasticity. I feel it is best to look at materials and their complex compositions as active forces.

Chair of Art History & Material Culture at the University of Groningen, Professor of Art, Ann-Sophie Lehmann states, “The notion that materials are active, complicated and challenging rather than inert, simple and straightforward contradicts the role they have traditionally been assigned in the field of art history. Based on the separation of the realm of ideas and matter in antique philosophy, art theoreticians of the Renaissance argued that materials had but little influence on the quality and meaning of works of art.” While material may not lie at the heart of a critic’s view, in terms of ceramic art we know that the properties of clays around the planet historically determine the type of work a culture can make. For example, the trimmed foot on Chinese Ming porcelain differ significantly from the feet on Japanese stoneware pots, due to particle sizes and the plasticity of the different clays themselves. Part of the reason for these aesthetic choices lies in what the materials can accomplish through their innate qualities. This perspective of materials is an important element of artistic creation, not just inanimate forces to be willed into being by the power of the idea. I am interested in materials as a dynamic element of artistic creation.

To have material literacy, and a profound understanding of materials, their inherent compositions and physical capabilities, allow for a crafting of objects which in turn speak to the essence of the materials themselves. Most artists spend an entire lifetime working towards a profound understanding of their medium. Material literacy is critical in the plastic arts. This awareness of materiality lends itself, naturally, to the craftsmanship necessary to make such art objects. Lehmann adds, “Dutch authors for instance did not solely conform to the separation between mind and matter but also
promoted the ‘knowledge of the hand’, carefully endowing technical skill with intellectual properties.”  

Dr. Marc Kosciejew, a Faculty member of Media & Knowledge Sciences at University of Malta, is in heavy support of Lehmann’s perspective on materiality, stating: [Lehmann’s] “call for greater material literacy to help us better learn and understand more about our material surroundings. Lehmann argues that we need to have more awareness of and appreciation for the basic materials of our daily world. She explains that to uncover the richness of the material world, including how it affects us and its implications for our lives, we need to know what it is made of; in other words, what actually makes up the objects and things that we need and use?”  

While Kosciejew’s primary focus is documentation, and its importance as the materialization of information, his defense of Lehmann’s views regarding the lens with which we view art history and its ties to materialism stands true. He points out that, “Lehmann uses the art history discipline as a case study to show how material literacy can be applied and studied. She argues that art history can be viewed as a training ground for this kind of literacy—learning with and through materials, or material learning—by showing how art relates to the material world and vice versa. She argues that “to have material literacy means to be able to express oneself clearly about materials’ qualities, histories, and affordances”

Lehman herself points out that this notion of materialism has deep roots in the sciences, and that empirical analysis along with a “chemical awareness” of a material allows for a deep understanding of its uses and outcomes. Lehmann reaches back in time, observing how past cultures perceived material awareness as a vital part of object making. Lehmann suggests that, “Natural materials, such as marble, alabaster, wood or clay are quarried, polished, purified and so on, processes that entail the use of other material substances and elements, such as metal, textiles, air, fire or water. Composite

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14 Kosciejew, Marc. 2017. A Material-Documentary Literacy. Minnesota Review. Vol. 88 pg. 96-111. Dr. Marc Kosciejew is a Lecturer of Library, Information, and Archive Sciences within the Faculty of Media and Knowledge Sciences (MaKS) at the University of Malta. Marc received his Master of Library and Information Science (MLIS) and PhD in Library and Information Science from Western University in London, Ontario, Canada. 

materials, such as textiles, glass, paper, porcelain, bronze, lacquer, ink, pastel or paint combine different material components, which themselves have undergone various treatments. As such, artists’ materials are part of the alchemical sciences, which should not be misunderstood as an occult tradition but should be acknowledged as the precursor to the science of chemistry.”

Such attitudes were clearly present in Renaissance times, where individuals like Leonardo da Vinci and architect Filippo Brunelleschi incorporated the sciences into the foundations of constructing art.

Clearly there is a call amongst certain circles to realign attitudes and re-think how ideas are informed by one’s own understanding of the elements used and embrace a culture of material awareness and aptitude. By seeing and understanding the innate qualities found in materials, the artist can cultivate a deeper understanding of their abilities and properties. From that a dialogue emerges where materials can inform ideas creating harmonious and empathetic art objects that speak directly to their qualities and the landscapes from which they originate.

The interdisciplinary aspects of my work at MSU have helped me to understand my medium in deeper ways, connecting the haptic nature of clay in the studio with the scientific understanding of clay in the laboratory.

Another aspect of my research involves a deeper look into the binary relationship between the idea and the object. While the idea is directly connected to the human elements of the art object, this should not marginalize the impact materials have on the beginnings of a concept. Jane Bennett, a professor of political science at Johns Hopkins University, argues political theory needs to do a better job of recognizing the active participation of nonhuman forces in events. In her book, *Vibrant Matter*, Bennett speaks to this exchange between the animate and inanimate. As the Duke Press states “Toward the end, she theorizes a “vital materiality” that runs through and across bodies,


17 Bennett, Jane, *Vibrant Matter: A Political Ecology of Things*. 2010 Jane Bennett is an American political theorist and philosopher. She is professor at the Department of Political Science, Johns Hopkins University School of Arts and Sciences.
both human and nonhuman. Bennett also explores how political analyses of public events might change if agency is acknowledged as the effect of ad hoc configurations of human and nonhuman forces.” Again, the inherent materiality of the world has as much impact on artists’ lives and actions as do their thoughts.18

Donna Haraway, a professor at UCSC uses the term “natureculture”19. Rick Dolphijn and Iris van der Tuin state that, “The term proposes a cultural theory that radically rethinks the dualisms so central to our (post-)modern thinking and always starts its analysis from how these oppositions (between nature and culture, matter and mind, the human and the inhuman) are produced in action itself. It thus has a profound interest in the morphology of change and gives special attention to matter (materiality, processes of materialization) as it has been so much neglected by dualist thought.”20 This concept of neo-materialism, or new materialism; coined, independently, in the mid 1990’s by Manuel DeLanda and Rosi Braidotti, pushes back against contemporary binary philosophies. My belief that materials have direct impact over the crafting of objects, especially over time and an artists’ growing awareness of a material’s innate properties, is demonstrated through a body work that seeks to embrace the inherent qualities of locally sourced clays and rocks and places them in the subjective space of the gallery.

19 Donna J. Haraway is a Distinguished American Professor Emerita in the History of Consciousness Department and Feminist Studies Department at the University of California, Santa Cruz, United States. She is a prominent scholar in the field of science and technology studies, described in the early 1990s as a “feminist, rather loosely a postmodernist
MATERIALS VS. NATURE:
SOURCING FROM THE LANDSCAPE

There has been a division separating materials from nature for as long as civilization has existed. Through the human lens, the surrounding wild spaces are identified by what elements can be transformed into materials: a word that denotes use. The world is systematically divided by its uses and impacts on human culture. Nature is a wild thing, yet to be conquered and sorted, distilled into materials that might better serve humanity and industry.

In her 2014 book, *Undermining*, Lucy Lippard states bluntly: “undermining literally -- as in pits and shafts that reflect culture, alter irreplaceable ecosystems, and generate new structures; undermining’s physical consequences, its scars on the human body politic; undermining as what we are doing to our continent and our planet when greed and inequity triumph; undermining as a political act --subversion is one way artists can resist.” 21

Miwon Kwon, an Associate Professor of Art History at the University of California points to Lippard’s observations on how places define the people within stating, “Lippard contends that since our sense of identity is fundamentally tied to our relationship to places and the histories they embody, the uprooting of our lives from specific local cultures and places --through voluntary migrations or forced displacements--has contributed to the waning of our abilities to locale ourselves.” 22

There are hundreds, if not thousands of small kaolin mines scattered throughout the continental united states. While the majority of these sites would be suitable for the needs of the everyday ceramic maker (tiles, brick maker, potter, etc.) most of these resources are claimed by mining companies and suppliers of industrial grade kaolin. Even small deposits can be valuable as iron-free clay necessary for the production copy paper and cosmetics. Another use of kaolin deposits by industry are as water barriers for tailing ponds, as the quality of clay to retain certain amounts of water before becoming

21 Lippard, Lucy R. *Undermining*. 2013 pg. 2
22 Kwon, Miwon. One Place After Another. 2002 Pg. 158
impermeable. The fate of kaolin in Montana often follows a vicious cycle where the
deposit is stripped of its material, leaving just enough to create a liner by which moisture
is impeded from entering the water table, at which point the site becomes a toxic dump
for other mining materials, off limits to those seeking plastic clays for ceramic uses.

Sourcing materials that are the byproduct of industry rather than “virgin” materials
found in the unspoiled areas of Montana is an alternative to damaging the landscape.
Often, I find that in the spaces where industry and nature meet are prime locations for
sourcing materials with high value as clay and glaze resources. Since the tremendous
energies necessary to process clay and rock have already taken place, using said elements
in my own work lowers my carbon footprint and does less damage to the environment. I
have started to question the value of taking materials from deep within these fragile
ecosystems and focusing on the leftovers of the mining and farming industries as well as
the detritus of cities and towns. When the state of Montana carved out Butte Pass to make
way for I-90, they exposed large amounts of uplifted bedrock to erosional forces. Years
later, I only need to pull off the side of the highway and shovel pure quartz monzonite, a
premier glaze material, into a bucket as the igneous rock erodes before my eyes, a
victim of the freeze-thaw cycles of Montana weather. Here the approach of less-is-more
becomes paramount and the connection between the materials I gather, and the context of
place becomes more vital, talking more about these spaces changed by “progress of
industry” and less of the virtue of beautiful untouched landscapes.

Through Neo-materialism and material agency I explore how my understanding
of place and specific landscapes shape the ways in which I play with materials. I say play
because there is a dream-like and playful scale to my work, invoking value systems born
from family and cultural ties. I relate to materials through experience and perceived
worth, stemming from my own ventures into home renovation and property ownership. In
using slag, quarried from the banks of Silver Bow Creek in Butte, I can speak to the
qualities of the landscape in which Butte resides. The slag is the direct byproduct of
copper smelting, where the arsenic and lead are separated from the veins of copper by
crushing and melting the very rock the copper originates. This process required immense
amounts of energy, from wood fired kilns to coke production furnaces, not to mention
human effort and even loss of life. It is inconceivable to fully comprehend the amount of
time, energy and impact that it took to put these walls in place, making something
“functional” from the inert remains of a caustic process. As for the lead and arsenic, these
toxic elements escaped into the air to wreak havoc on the surrounding landscapes.23 By
working with the Silver Bow Creek Slag, I seek to harness the stored energy found within
the material and reference the history that pertains to the area of its origination: Butte.
Materials can be tied, sometimes profoundly, to the spaces created within them, and
reflect divisions in our culture where the elemental qualities of a material can outweigh
the value of human life.

23 Timothy LeCain, in his book The Matter of History explores the impact of copper mining on Western Montana in
pgs. 171-180 under the section The Copper City
Using glaze research along with chemical analysis of local materials, I create works that speak to qualities found in both the raw clay and fired ceramic. The indexical qualities of clay, along with its direct tie to the landscape have always been a tremendous factor in my own practice. This, included with my interest in geology and the chemistry of rocks, have created extensive material literacy, awarding me an appreciation for the bounty found in the surrounding landscape. By speaking to the values of neo-materialistic thought and a reassessment of impact that inanimate materials have over ideation and the creation of objects, the relationship I have with these spaces, as well as the materials I find within, impacts the artistic works I make in my own practice. The various hues of earthenware and their striated layers are a beauty in their own right, crafted by time and weathering. As the clay artist, Margret Boozer, states: “I felt compelled to respond.” I also feel compelled to understand these materials and respond in kind. For me it is the drive to engage with the viewer through these materials. While simply piling clay and dirt in the gallery might suffice as a holistic experience, I seek to engage the viewer through the material nature of both clay and fired rock.

My primary goal then is to tie the land to my work, letting the indigenous materials speak for themselves mediated through me. Moreover, by utilizing stages, or artistic platforms, which incorporate cement, sheetrock and steel as framework for raw clays and fired rock, I seek to create a pathway, or dialogue regarding the local materials and their connections to the landscape. Or are they seen as a part of nature, with the ceramic materials (brick and tile) transforming natural spaces into the cities and towns we surround ourselves with now? In the 18th and 19th centuries, across the American continent the presence of clay allowed early settlers to manufacture bricks,

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24 Margaret Boozer lives and works in Prince Georges County, MD. She receiver a BFA in sculpture from Auburn University and an MFA in Ceramics from New York State College of Ceramics at Alfred University. Boozer developed an interest in digging native clays that has led to collaborations with soil scientists and work that explores intersections of art and science.
which in turn created many of the country’s oldest cities. Without clay, there were no brick, without bricks, industry lacks the kilns necessary to process metals as well as providing permanent, fire resistant structures. The innate refractory qualities of clays have had a huge impact on civilizations across time. Clay becomes ceramic through human intervention and intention, setting the stage for industry and human advancement. In my own work, the hope is that the two, clay and fused rock, will inform each other. The panels themselves, will also speak to the landscapes of Montana, both its natural spaces, but the places where humanity resides. Having spent my formative years remodeling houses and being taught to appreciate craftsmanship and architecture, the materials found in building construction leave a mark on my psyche as well as my artistic endeavors. The fragile relationship between the landscape and the dwelling – truly man’s first vessel can be seen everywhere in Montana. In my work, the value of clay hinges on my understanding of its materiality, while to the rancher and construction worker it is a blight. Clay is ripped from the ground and replaced with concrete: the material of civilization. By using these materials, such as cement and steel, I would talk of this fragile dynamic within the landscape, and the human obsession with controlling nature, or trying to keep it out.

For my thesis work, I’ve created blocks of pure material, showcasing the variety found in Montana through a series of clay panels, which effectively act as mediators between the gallery space and the materials themselves. The panels are cohesive in form and surface, showcasing my extensive research into local rock and clays (fig. 1).

The panels are constructed from the same materials one would use in glazes, but in a raw state, creating a dynamic exchange of surfaces – all with strong connections to the landscape. The panels have been made alongside the fired blocks making sure that the two bodies of work are complimentary of each other. I see this show as a culmination of two years of research, experimentation, and a better understanding of my own processes, doing so through the fusing of crushed rock into thick blocks of laminated granite, feldspar, monzonite and copper slag. Utilizing
abundant sources of rock, I layered these found elements and fused them at high temperatures exceeding 2300 degrees Fahrenheit (fig. 2). The surfaces achieved, and the dynamics created through the release of stored time and energy in the fusing of these rocks, are paramount to creating viable surfaces and forms. It is geology reengineered, utilizing the chemical nature of the silica in conjunction with the fluxing(melting) qualities of iron and feldspar to create dense, strong blocks of fused rock. Also, incorporated into the show are drywall panels covered in a thin skin of plaster and local materials including Butte mine tailings and slag from the walls of Silver Bow creek (fig. 3). By stretching these found substances over a common construction material like drywall, I seek to create a link between the way we perceive the landscapes around us and its inherent connection to the way in which we build our homes. These construction methods also speak to my own relationships and understanding of these building supplies and how my knowledge of their uses and implementation lends itself to my installation art.

In addition to my conceptual work, I sought to convey my understanding of material agency by utilizing locally sourced rocks and clays as glaze materials for utilitarian forms. My belief is that through understanding the elemental nature of these materials, the metals, bases and acids, I can showcase these specific qualities by literally stretching them over ceramic vessels. These vessels can then connect the viewer directly to the landscapes from whence they came.

A prime example of this is a glaze derived from the Slag walls of Silver Bow Creek in Butte Montana (fig. 4). A by-product of the copper mining industry, slag is rich in silica, alumina, calcium, and metals like iron, manganese and copper. By creating a thin-skinned glazed surface on the ceramic bottle below, these metals crystallize on the surface of the vessel, directly correlating to their abundance in the slag material itself (figs. 5 & 6). I strongly feel that the qualities found in these local materials can and do directly translate to the surfaces created by firing these glazes on ceramic forms. In many ways too, it is easier for the viewer to connect with handmade utilitarian forms and engage with the vessels aside from merely being a spectator, unable the physically touch the work.
In this instance, I feel that touch conveys a stronger sense of presence than visual stimuli alone and objects like ceramic vessels create a stronger connection to the landscape from which materials like clay and crushed rock are sourced from. Both instances of art works, i.e. installation art and utilitarian vessels can speak directly to the materials they are comprised of and then convey that sense materiality the viewer.
Throughout my time in Montana, I’ve created a conduit between my experiences in the surrounding landscapes, unhindered natural spaces, and the works that I make through personal exploration. Speaking to the elemental nature of the materials I find, such as the colorful bands of clays in Bear Canyon to the innate qualities of man-made structures like the Silver Bow Creek Slag walls, I can communicate through history and embedded time, using these materials as referents to the spaces in which we reside. As I stated earlier in this paper, the rocks and clays of Montana can speak for themselves, their primal qualities of plasticity and fusion the truest form of function and utility. By understanding these elemental qualities at a scientific level, they begin to inform one’s ideation and can lend themselves to the creative processes in new found ways. As science and technology advance, layers of ceramic phenomena are continually peeled back revealing that these materials of the earth have a bigger role to play in how spaces are constructed. It is essential to understand the unknown qualities of the materials humanity uses and exploits have just as much of an impact, often negatively so, as the qualities we capitalize upon. Neo-materialism is not a philosophy or dogma, but a lens, used to look at the world and evaluate the agency of everything around us. To ignore such agency is to invite lasting consequences, especially in the age of synthetic materials. Humankind has lived with the rocks and soils for their entire existence, a relationship that is responsible for survival. It’s hard to say what lasting relationships will be endured with the plastics and toxic metals created out of “progress” and industry, hindsight is a convenient thing that way. The more artists account for the agency in the world, the more holistic advancements become. Through material literacy the bigger picture becomes clear and artists can be empowered to create dynamic objects and spaces.
REFERENCES CITED


Keen, Sam. 2010 *The Disappearing Spoon*. NY: Little Brown & Co.


Figure 1 – Clay Panels
Figure 2 – Glaze Rock Blocks
Figure 3 – Thesis Show Drywall Panels (center)

Figure 4 – Silver Bow Creek Slag Walls, Butte, MT
Figure 5 – Porcelain Bottle w/ Slag Glaze. Wood Fired, Reduction Cooled

Figure 6 – Porcelain Bottle w/ Slag Glaze (detail)
Figure 7 – Sake Bottle w/ Slag Glaze – Wood Fried w/ Thistle