

**ON THE FUTURE OF OBJECTS**

by

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## **Abstract**

The objects of our everyday lives mediate our daily activities, experiences, and interactions. As external manifestations of who we are, objects effect both our culture and our experiences. In order to understand the future of objects, we must first look to their pasts. As we investigate the underlying cultural and productive patterns that they create and recreate, we can begin to understand the future of objects. This purpose of this essay is to examine the ways that objects are linked to the past in order to better delineate how objects might evolve in the future.

## **I. Introduction**

We are products of our objects. Objects mediate our daily activities and social relationships. Objects appropriate and shape our interactions. Their existence makes up both the cultural environment and the social substrate in which all of our experiences take place. We cannot escape our objects because they *are* our culture; they *are* our experiences as external manifestations. Objects make up our languages, our thoughts, our values, our memories, our genes, and our histories. It is critical that we understand our objects in order to understand who we are, where we came from, and where we must go.

But to understand the future of objects, we must first look to their pasts. From the objects of the industrial revolution to those of the railway age, the electric world, mass production, and the information age, objects reveal something about their futures. As we investigate the underlying cultural and productive patterns that they create and recreate, we can start to delineate the future of objects. This purpose of this essay is to examine the ways that objects are linked to the past in order to illuminate the threads which link objects to their futures.

## II. Objects as Patterns of Everyday Life

Objects are far more than the concrete manifestations that we see and use. They are not just composed of discernible traits, but of intangible and ethereal properties. An object is both a solidification of a process (of a continuous pattern of production and reproduction), and an instrument which instills patterns within everyday life. However, we largely ignore these patterns because they fall outside our practical perception.

In *Understanding Media: The Extension of Man*, McLuhan argues that we have a tendency to focus on the obvious, and by doing so, we often miss the underlying structural changes in our lives. Whether it be a new idea or a new invention, we readily perceive many outstanding properties while overlooking the more subtle, and often more dynamic, properties. We generally know what an object will nominally do (or what it is intended to do), and what it might replace. We can grasp its potential advantages and disadvantages. But, as is often the case, its unintended effects upon everyday life become visible only after a change takes place over an extended period of time. Often we have to wait for the cultural context to shift in order for the effects to be revealed. For example, we can easily reflect in the present about the automobile and its effects and consequences upon culture. We can see how the automobile transformed the city, changed our social relations, and spawned new cultures. But in the early 20th century, while the automobile was still a new thing, many of these consequences were either invisible or unanticipated.

Many unanticipated consequences originate from conditions in society which society does not or cannot consider. These conditions include historical precedents, political and religious issues, and the secondary effects of a bedlam of complex interactions. The

consequences brought forth by an object shed light upon its tensions within its cultural fabric.

For McLuhan, a message is "the change of scale or pace or pattern" (McLuhan 8). It is not the content of the media, but the change in the cultural dynamics which the new innovation brings. For example, the message of a mobile phone network is not the content of conversations that take place over it, but the change in the patterns that it enables. Similarly, the message of a news report is not the story itself, but the change in public attitude patterns towards the issues presented within the story. What McLuhan asks us to do is to look beyond the obvious and seek the underlying changes that are enabled, enhanced, destroyed, or extended by a medium.

McLuhan defines medium as "any extension of ourselves." By doing so, he does not distinguish a medium from a tool, or from any object for that matter. Just as a hammer is an extension of our arm and eyeglasses are an extension of our vision, a telephone is an extension of our voice. Similarly, the medium of language extends our thoughts from within our minds out to the surrounding world. This is the meaning of "the medium is the message." We can know the properties of anything we create (the medium) by virtue of the changes that they effect (the message).

Matthew Fuller defines standard objects as "dynamic systems in which any one part is always multiply connected, acting by virtue of those connection, and always variable, such as it can be regarded as a pattern rather than simply an object" (Fuller 4). Like McLuhan's definition of media, Fuller's standard object is not a static thing, but a pattern — in this case a productive pattern. Fuller's object is a dynamic closed process which grows and extends through each material iteration. It is because of this that Fuller's idea of a standard object is not a tangible thing that can sit on a table, but more of an object-iteration defined in terms of a temporal and cultural space as well as a physical space.

"The standard object is that moment when misplaced concreteness becomes productive rather than simply reductive, when the analytical isolation of elements inherited from Newton produces a whole world of amputated, self-sufficient but recomposable elements. In the most straightforward sense, it is what makes the component-based world of manufacture" (Fuller 169).

Standard objects in their material form are artifacts—snapshots of a technological process. They are "processes embodied as objects, as elements in a composition. Every element is an explosion, a passion or capacity settled temporarily into what passes for a stable state" (Fuller 1). Their material manifestations represent slivers in time and situation of larger, more-complex patterns. From each iteration emerges another object variation informed by the objects of the past and evolved to meet the political and cultural forces of the present.

To Fuller, a standard object is an implementation of norms and a replicable set of properties. Such repetition implies (and requires) a common cultural understanding. Therefore a standard object requires an embodied meaning which is culturally ubiquitous.

Although both McLuhan and Fuller envision objects in the context of patterns, how they apply these patterns are quite different. To McLuhan, the pattern occurs in the form of the attitudes and practices of the object's users. To Fuller, the pattern occurs in the evolution and replication of the object itself. Even though both speak of different patterns, both are significant because patterns imply replicability, and therefore predictability. If we can look beneath the surface of the prominent and discernible properties of our objects and take into account underlying patterns we can gather insight from what is concealed.

### **III. Memory**

Our objects remember us. Their form and function reveal information correlating to what is culturally important to us in our own lives. They tell us how they intend to be used, or for that matter, how they intend to be neglected. They dictate to us how they are situated within our lives, within our politics, and throughout all of our social constructs. They speak about our histories, what has been valuable in our past and what will be of value in our future.

We know how to use the objects which surround us. Whether we wake up in a hotel room in Tokyo or an apartment in Buffalo, we, with minimal effort, are able to brew a cup of coffee using a coffee maker we've never before used and turn on a television in which we have never before touched. We are able to turn on the faucet and set the water to a comfortable temperature. All of these objects provide us the information regarding how they are to be used. But what enables us to complete these tasks with a high level of efficiency without fumbling around trying to figure things out?

The objects we encounter on a daily basis contain standardized information inscribed within their forms, which provide a cultural pattern informing us of their use. "Artefacts in use constitute habits of action" (Vihma 1). No one has encountered every variation of a television, but for some reason we are still able to turn on all of them. Every television has a power button with a form and function which are predictable. The embedded properties of the power button provides us with enough intuitive know-how to power on every television. These action-possibilities are known as "affordances."

## **A. Affordances**

Affordances permeate both HCI (human-computer interaction) and industrial design literature, appropriated by these fields because of their central objective to explain the functional relationship between people and technologies. "The strength of the concept of affordance is that it establishes the properties of material things in relation to a particular species. It treats the world of objects and material forms as connected in ways that are enabled by their physical properties" (Dant, Driver-car 65). In other words, technology that exhibits action-possibilities is generally considered to be better aligned to the human experiences of everyday life and therefore easier to use.

The original idea of affordance was born out of Gibson's consideration of the relationship between animals and their surrounding environment. In his *The Ecological Approach to Visual Perception*, Gibson observes that "animal and environment make an inseparable pair" (Gibson, Ecological Approach 8). "It is for this reason that Gibson proposes the idea that animals can sense things in their environments because of their perceptual capabilities are directly related to the casual aspects of nature" (O'Neill 50). Objects within nature have properties; some objects are green while others are shiny, some objects are noisy while others are silent, some objects are cold while others are wet. "For Gibson, information is simply present in the world around us as the qualities that manifest when certain things act on other things in casually related physically (O'Neill 50)." We have evolved to sense and make use of these environmental properties through perception, but this perception is completely independent from the properties of the environment. To Gibson an affordance is "an action possibility available in the environment to an individual, independent of the individual's ability to perceive this possibility" (McGrenere and Ho, 2000). This is what makes Gibson's idea so tantalizing: an affordance is culturally-independent. "The

affordance of something does not change as the need of the observer changes...The object does what it does because it is what it is” (Gibson, Ecological Approach, 139).

Tautologies aside, the beauty of Gibson's idea lies in the deliberate attempt to bridge the objective-subjective dichotomy by searching for a common asymbolic overlap between humans and their objects. Gibson's affordance is neither subjective nor objective, but an independent and intermediate melding of both. Objects have their own set of properties that are readily, and sometimes implicitly, understood by their users without the aid of any other information, including cultural information. To Gibson, a doorknob provides enough information to its user to be turned, regardless of the user's previous experience with doorknobs.

Norman, Gibson's student, disagreed with Gibson's notion of affordance by establishing his own conflicting definition. Much of the confusion which Norman brought to the table centered around the question of the cultural dependence of affordances. To Norman affordances were not an independent item, but instead composed two components: the properties of the object (objective) and the experience of the user in order to make best use of the properties (subjective). Therefore, according to Norman, an affordance is dependent upon cultural knowledge, consequently collapsing the subject-object bridge.

Norman's definition of affordance ultimately prevailed on the strength that it accounted for more complex interfaces. A tree stump may readily afford "sit-ability," but how can we open a pad lock without somebody teaching us? Sure, the dial affords "turn-ability" but the intended function of the lock (secure-ability) is hidden to us until we observe someone else using it. This is known as a hidden affordance. "How we know that a particular object is offering a particular affordance depends on what we know of that object” (Dant, Driver-car 66).

Affordances are not just beings of the cognitive, but also the affective. Graphic designers

understand this well. Their work poses a deliberate attempt to generate desire (positive affect) to buy products. Emotion is significant because it is the very mechanism which generates trust. For one to use an object, one must trust its affordances to operate appropriately according to expectations. A rat pushes a lever and receives a nugget of food — its reward. The reward in this case generates a positive affect and provides agency for the rat to push the lever again, and again, and again. In our world of objects and affordances, the reward is not this simple and generous. We pull on a door handle because it affords open-ability. It opens. The validation of the truth of the affordance provides our only reward: a tasty nugget of "ontological security" (Giddens). The predictability of the affordance is generated from our past negotiations with the door handle. The cultural validation of the door handle operating predictably reinforces our trust bond with the door handle. "It sustains trust in the continuity of past, present, and future, and connects such trust in routine social practices" (Giddens 105).

Of course, affordances can also provide misleading information. Doorknobs don't always turn and, unfortunately, all automobiles will eventually break down. Gaver (Norman's former student) coined the term "false affordance" to describe this. A false affordance exists when there is no action possibility but the information that specifies it. False affordances are misleading, corrupt information which impede and distort our pre-composed understanding of an object. They are a delusory break with our instinctual connection with the object. To put it simply, we sit on the cardboard chair assuming that it is sturdy. It buckles under our weight. We hit our heads on the floor. Ouch! We have been deceived.

Affordances connect the past, present, and future by providing consistent action-possibilities to each object-iteration. If we understand objects as iterations of patterns, affordances are threads strung through time, suggesting paths in which objects are most likely to

evolve. Chairs may change form, but even if most of their properties are swapped-out for new ones, they tend to maintain their affordance of "sit-ability." A chair from the Victorian era may visually appear to be completely different than a modern camping chair, but the affordance of "sit-ability" must remain a consistent design element. "Chairs are designed, made and placed by human beings following cultural patterns that are learnt and reinforced discursively. That a particular chair is intended for a particular person and type of person may be designed into the chair" (Dant, *Material Culture* 79-81). Even in the face of a paradigm, where a completely new design replaces an old one, affordances hop from old objects to the succeeding objects. When compact discs replaced their cassette tape predecessor, the CD player maintained the original affordance (portability, playability) which made the tape player popular, even if the CD uses a completely different process for storing music.

Affordances therefore provide a thread in which object evolution follows. Architect Louis Sullivan's phrase "form follows function" applies here. Objects, in the absence of cultural and political influences, tend to evolve predictably in accordance with their affordances; they are the strands which connect past object-iterations with present and future ones.

## **B. Embodied Memory**

Just as objects shape us and our cultures, we create objects to shape our lives, intentions, and goals. Objects make up the context of our lives—from our loves and ambitions, to our experiences and our activities. "At home using kitchen or other domestic equipment, at the office using pens, filing cabinets, computers, and telephone and in all sorts of work and leisure activities, we use things to shape the world around us and enable us to do what we need or wish to do in it" (Dant, *Materiality* ix).

Cultural memory is embodied in all of our objects. Whether it is a simple coffee cup or a complex supercomputer, information corresponding to its cultural context and its history is embedded in its form and function. The relationship between "objects and human bodies is characteristic of a particular culture—it is precisely this that enabled archaeologists and anthropologists to study 'exotic' cultures, displaced in place or time, in the absence of contemporary documentary account of the culture. We might even say that the material stuff of a people provides a document of the culture and, of course, its documents, whether gravestones, pen and ink writing or typescript, are material objects too" (Dant, Materiality 2).

To design an object is to build into it characteristics of form and function that the consumer will respond to. The "connection between designer and consumer could be construed as a one-on-one communication process between them as individuals in which an object acts as an intermediary of vehicle but in fact the process is cultural and shared" (Dant, Pragmatics 3). In other words, objects have embedded within them intentional actions of those who designed and built them.

To George Herbert Mead, what is distinctive about human actions are their orientation to meaning which is generated within society so that "objects are constituted in terms of meaning within the social process of experience" (Mead 77). Meaning is not a social construct; it is cultural. Without a pre-composed agreement among a group of individuals, a stop sign would have no meaning, nor a toothbrush, nor a language itself. An object, therefore, is a result the accepted conventions, agreements brought about by repetition, put forth by society, and based upon cultural values. These agreements, encoded and decoded within a object's design, reveal clues about its larger cultural body and provide a blueprint for new languages and processes. "Every text is a system of signs organized according to codes and subcodes which reflect certain

values, attitudes, beliefs, assumptions and practices” (Chandler 157).

Interaction with objects depends on socially acquired skills for recognizing what can be done with the object. These skills can be acquired through culture, but often they are embedded within the objects themselves. This means that intentional actions are stored within objects by previous people (manufacturers and designers) and are recalled in the action of the present actor. For example, the form and potential movement of a steering wheel constrain how it is to be interacted with. It can be turned to the left, or turned to the right, but it is limited to only these mechanical functions.

### **C. Cultural Habits: Skeuomorphs and Path-Dependent Objects**

"The resistance of standard objects to change, occurring through the dimensions of relationality by which they are formed and which they make, is itself something to be recognized as a force. Not everything can be easily 'turned to account.' The standard object is the concrete shadow of the potentiality of which embodies and mobilizes a part” (Fuller 170).

Many objects that we encounter in our everyday lives have properties which have fallen out of practical use. An air intake grill on an electric car, a watch pocket on a pair of jeans, and a decorative handle on a jar of maple syrup all are functionally obsolete, yet never the less, remain consistent design elements over each object iteration. "Hard plastic casings complete with screw heads and unnecessary parts. Soft plastic with molded-in textures of warp and woof and even stitching. Metered postage showing the bold anachronistic elements of the circular town mark and wavy cancellation. Copper cladding over zinc pennies. Steel cladding over copper quarters. All are efforts to make the new look comfortably old and familiar, or simply habits too deeply engrained to wash away" (Gessler 229). These properties are known as skeuomorphs.

According to Katherine Hayles, "a skeuomorph is a design feature that is no longer functional in itself but that refers back to a feature that was functional at an earlier time" (Hayles 17). "They provide us with familiar cues to an unfamiliar domain, sometimes lighting our paths, sometimes leading us astray...They are informational attributes of artifacts which help us find a path through unfamiliar territory. They help us map the new onto existing cognitive structure, and in doing so, give us a starting point from which we may evolve additional alternative solutions. They provide us "a path" instead of "no path" at all" (Gessler 229-230).

Unlike affordances, which account for practical relationships, skeuomorphs account for post-practical relationships. Skeuomorphs provide a continuous cultural referent linking an object to its past and future through the perpetuation of benign properties. They provide ontological security through familiarity as both culture and its objects evolve. We, therefore, become the rats as we replicate obsolete properties for the empty reward of maintaining anachronistic values. Because of this, skeuomorphs "constitute a special class of self-deception" (Gessler 230). They are a class of false affordances ("true" affordances from another time) which persist in the face of change.

"Skeuomorphs visibly testify to the social or psychological necessity for innovation to be tempered by replication...Like a Janus figure, the skeuomorph looks to the past and future, simultaneously reinforcing and undermining both. It calls into play a psychodynamic that finds the new more acceptable when it recalls the old that it is in the process of displacing and finds the traditional more comfortable when it is presented in a context that reminds us we can escape from it into the new" (Hayles 17).

As new objects are produced in the future, some functional properties which have cultural value will continue to persist as non-functional artifacts. As Western societies continue

to move on from the analog age into a digital age, mechanical designs will continue to be supplanted by flat screens. In fact, this is already happening on touch-based mobile devices. The iPhone, for example, continues to produce DTMF tones as the keypad numbers are pressed even though there is no practical reason for doing this.

The path-dependent object, a cousin of the skeuomorph, also connects the future and the past together, but in a functional way. Path dependence, a term used in evolutionary economics, explains how the set of decisions one faces for any given circumstance is limited by one has made in the past, even though past circumstances may no longer be relevant. It originally sought to describe how existing technologies were adopted into new industrial economies. But this term is also useful in describing object evolution and therefore should be extended towards objects to explain why inefficient and archaic object properties persist throughout successive object iterations. Unlike skeuomorphs, which are functionally benign, path dependent objects are functional, yet outdated and imperfect. They act more as cultural habits than cultural referents. They afford practical recognizability, a true affordance in its own right, while skeuomorphs are false affordances

The Qwerty keyboard layout, for example, demonstrates how the continued usage of an imperfect standard took its place as a cultural standard. The Qwerty layout rose to ubiquity in the late 19th century because it was designed with the intention of being inefficient. By deliberately slowing down typists' keystrokes, the mechanical limitations of the typewriter could be overcome. Rearranging the keys to the Qwerty layout decreased the occurrence of typewriter hammers jamming up, ultimately leading to greater efficiency. The pervasiveness of the Qwerty layout, and the sustained use of 'typewriter type' objects, created a cultural habit strong enough to withstand the introduction of the more efficient layouts, including the Dvorák layout in 1936.

To the economist, the cost to retrain a workforce to use a more efficient layout is greater than perpetuating the Qwerty layout. Because of this, path-dependent objects are often formed from cultural habit instead of cultural value. We can blame cultural habits for fact that the majority of brand new computers and 'smart phones' which we see today possess a keyboard layout which was patented in 1874.

Path-dependence also evident in oral traditions. Stories, patterns, and events that pass from generation to generation often become obsolete in the face of a changed culture. During the Christmas season many people, religious or not, drag pine trees into their houses even if they do not subscribe to the Christian faith. In this case, experiential space is maintained, as the traditional practices continue onward. Yet, for the most part, experiential space must be maintained in order for an object to continue to exist.

#### **IV. Object Evolution**

Objects are built upon their predecessors. They are manifestations on a temporal and productive echelon, enabled by previous objects. The telegraph, for example, enabled the invention of the telephone which, in turn, enabled the invention of the mobile phone. As each new innovation stands upon its predecessor, it also is constrained by the predecessor's design. To McLuhan it was "the bias and blindness induced in any society by its preexistent technology" (Fuller 81).

It was the force of multiple iterations of political and cultural conflicts which caused the telegraph pole to sprout out of the ground and lift its wires above the streets. "The material form of the telegraph pole in general is a simple result of the interplay of constraints and freedoms, affordances, brought about this combination. Once this patterning of matter has stabilized into a common practice, it is then taken up as providing another set of affordances for an entirely different set of practices (Fuller 86)."

The telegraph pole's practical design and pervasive implementation caused new technology to be formed around it. Even though there were more visually pleasing methods of stringing wires through cities, the exploration of these methods were slow. Society became used to the telegraph pole and its form has remained ubiquitous even till today, offering up new space to "synthesize, block, or make possible other worlds (Fuller 2)."

Objects are shaped by forces within the cultural environment. Whether these forces of change are social, technological, or practical, all of these forces are ingrained in the political. After all, everything is political. Each iteration of pattern is one of temporary political unity. It is here where Bauman's republican model becomes relevant:

"The most promising kind of unity is one that is achieved...by confrontation,

debate, negotiation and compromise between values, preferences and chosen ways of life and self-identification of many and different...an emergent unity which is a joint achievement of the agents engaged in self-identification pursuits, a unity which is an outcome, not an a priori given condition, of shared life, a unity put together through the negotiation and reconciliation, not the denial, stifling or smothering out of differences” (Bauman 178).

Bauman's democracy is a multitude of dialogues grounded in difference. From the interaction of differences, new conditions emerge, which have to be constantly re-negotiated. Bauman presents a model in which nothing is permanent except for change. But how can this model be extended to apply to the political negotiations which form objects?

Consider the political forces that unified in the creation of the automobile. First we have the "more, better, faster" ethos of the consumer. The primary reason people buy cars is to be mobile. If it wasn't for the concern of safety, there would be no speed limits and few stop signs. Cars would whiz down city streets at 100 miles-per-hour. Imagine the staggering fatality rate if this were the case. The safety concerns brought forth by governments and civic groups directly counteracts the desire for speed.

"We know that speed limits of twenty miles an hour would almost certainly eliminate most car fatalities, but we also consider the advantages of getting to our destinations quicker to be worth the resulting death rate. Proof of this casual acceptance of the disadvantages of the car could be imagined if one were to consider the fate of a political candidate who ran on a platform of reducing the national speed limit to twenty miles per hour. We know the advantages, even before implementation, but we choose to accept the disadvantages because there is a privileging of all types of technological extension, even deadly and horrific forms” (Kappelman).

As new patterns are introduced, they tend to ripple throughout the entire society, affecting, replacing, and shifting other patterns. As a result, new cultures, affordances, and practices to emerge. The automobile, described by Henri Lefebvre as the epitome of objects—a *leading object*, is probably the most notable example of this.

To Lefebvre, leading-objects are objects (frameworks) in which new cultures emerge. The automobile, for example, is a cultural sub-system which brought a salience, fostering a whole new range of material and communicative relations. The effect of the automobile has long-reaching implications, shifting everything "from urban design to our sense of excitement. It fosters hierarchies and performance...it is consumed as a sign, as a status object; it has its own code, the Highway Code" (Silverstone 86).

"It is an unimposing technical object, depending on the relatively simple functional requirements...,and structural requirements..., and [it] figures also in a simple, unimposing functional and structural social complex where it plays an increasingly important part; it gives rise to an attitude (economic, psychic, sociological, etc.), assumes the dimension of a complete object and has an (absurd) significance; in face the motor-car has not conquered society so much as everyday life on which it imposes its laws and whose establishment it ensures by fixing it on a level (leveling it)" (Lefebvre 101).

The automobile brought a unique technological arrangement to culture which consequently provided something quite general. "Their status as the centre and articulating principle of a system of technical and cultural relations which are both historically defined and socially sustained" (Silverstone 87).

The automobile brought about its own cultures and systems. "Clearly the suburb is a product of technological change, particularly in transport and communications" (Silverstone 62). The automobile's intended function of mobility, in turn, allowed for a suburban culture. The cultural value of mobility which originally spawned the creation of the automobile has led to new cultural values which fundamentally shifted the way people live. But as the automobile caused the sprawl of urban areas and moved the infrastructure of inhabited world away from pedestrian traffic it crowded out, not just other modes of transportation, but the experience of partaking in the modes.

## V. The Loss of Experiential Space

"Take the VCR, for example. Not only can it watch TV for you, it can watch more channels and watch them better than you can. Similarly, the Electric Monk does your believing for you. Instead of having to wade through mountains of propaganda, you'd tell your Electric Monk to pick a few random hopeless causes each week" - Douglas Adams, *Dirk Gently's Holistic Detective Agency*

Before the invention of word processors, schools taught "penmanship" to train students in cursive handwriting. Students would sit at desks, ink and paper at hand, and reproduce the same characters over and over again. Somewhere on this planet, tucked away in sleepy little village, a school still probably emphasizes this neglected subject. However for the rest of us, handwriting is a rarely practiced art.

It was once of social importance to have percipient handwriting. Clarity of public documents and neatness of personal letters was important for effective communication if not revealing something about one's character. But with the proliferation of typewriters after World War II, handwriting met its decline. Authors began to type their manuscripts and students began to type their papers. As telephones settled into their own salience, a handwritten letter lost its favor to a short and sweet phone call. By the end of the 20th century, the importance of typing had overtaken handwriting, replacing the experience of the practice.

In the age of email, word processing, and text messages not much is left be written by hand beyond filling out a check or compiling a grocery list. Many people who once wrote fluent cursive now must wrack their brains to remember how. Society at large no longer needs, nor values, quality penmanship, and thus has forgotten how to do it.

When the adoption of any object replaces a manual or technical task, the knowledge how to do that task is also replaced. For example, the introduction of ready-made dinners, cake mix,

and fast food led to the atrophy of the practice of cooking. The introduction of the telephone led to the experiential atrophy of Morse Code.

In the face of each new invention, the interaction between us and the new object causes a shift in experiential space, and replaces experiences not associated with the old object or task.

"The change in the way that objects are incorporated into activities...is not simply a change in objects, it is also a change in the embodied practices," in turn transforming "their relation to the action and to the process" (Dant, Materiality 2). It is through the direct interaction between individuals and objects that the culture is mediated, and when the object is swapped out for a new one, the culture changes.

"In the past, the cook used a simple tool, of a primary kind, that also fulfilled simple functions; her hand furnished the kinetic energy; she directed the progress of the operation, supervised the succession of action sequences, and could mentally represent the action for herself. Today, she employs an elaborate tool, of a secondary kind, that requires complicated handling; she truly understands neither its principle nor the way it works. She feeds this technical object with ingredients to be transformed, then unleashes the movement by pushing a button, and collects the transformed matter without having controlled the intervening steps in the operation" (de Certeau 211-2).

It is often problematic when experiential space cedes to a manual process. Experiential space encompasses the knowledge capacity created by performing processes through experience. When a new object comes into salience, it makes an old object or task obsolete and consequently making our experience with that object or task obsolete.

Now that our everyday lives are infused with electronic objects capable of efficiently storing, recalling, and searching for information, it is not just our experiences which are replaced, but our cognitive activities of memorizing and recalling information.

With portable objects capable of accessing the interconnected databases on Internet, and capable of automating memorization techniques, we were outsourcing, more than ever, our ideas, values,

and activities to the objects around us.

In his 2002 article entitled “My Blog, My Outboard Brain,” Cory Doctorow described his blog as a repository in which to store and recall thoughts:

"The nuggets I've mined are at my instant disposal. I can use Blogger's search interface to retrieve the stories I've posted with just a few keywords...I flip back and forth between my browser and my editor, entering a few keywords and instantly retrieving the details of some salient point -- it's my personal knowledge management system, annotated and augmented by my readers...Being deprived of my blog right now would be akin to suffering extensive brain-damage. Huge swaths of acquired knowledge would simply vanish....my blog frees me up from having to remember the minutiae of my life, storing it for me in handy and contextual form" (Doctorow).

In the September 2007 issue of *Wired* magazine, Clive Thompson picked up on Doctorow's article and revisited the notion of the “outboard brain” by expanding it to all electronic storage media.

"We're running out of memory. I don't mean computer memory. That stuff's half-price at Costco these days. No, I'm talking about human memory, stored by the gray matter inside our heads...That reflexive gesture—reaching into your pocket for the answer—tells the story in a nutshell. Mobile phones can store 500 numbers in their memory, so why would you bother trying to cram the same info into your own memory?" (Thompson).

As Thompson observed, the point where our memory leaves off and Google kicks in gets blurrier by the day. But why apply this to only electronic objects? All objects, to an extent, act as a vessel for memory and consequently effect how we remember. As noted by Norman and Gaver, and realized by McLuhan, objects extend past their material manifestations and require our know-how concerning their use. They not only work on our experiences, changing the way with interact with our environment, but also work on how we think.

"Nietzsche in particular takes on a key role as the first philosopher to use a typewriter and thus as the first thinker to fully recognize that theoretical and philosophical speculations are the effects of the commerce between bodies and

media technologies. Nietzsche had this recognition in mind, Kittler suggests, when he observed in one of his few typed letters that “Our writing tools are also working on our thoughts”. When the progressively myopic retired philologist began using a typewriter—a Danish writing ball by Malling Hansen that did not allow him to see the letter imprinted at the moment of inscription—he not only anticipated *écriture automatique* but also began to change his way of writing and thinking from sustained argument and prolonged reflection to aphorisms, puns and “telegram style”. After abandoning his malfunctioning machine, Nietzsche elevated the typewriter itself to the “status of a philosophy,” suggesting in *On the Genealogy of Morals* that humanity has shifted away from its inborn faculties (such as knowledge, speech and virtuous action) in favor of a memory machine. Crouched over his mechanically defective writing ball, the physiologically defective philosopher realizes that “writing...is no longer a natural extension of humans who bring forth their voice, soul, individuality through their handwriting. On the contrary, ... humans change their position—they turn from the agency of writing to becoming an inscription surface” (Kittler xxix).

Nietzsche realized that the typewriter, lifted into existence by the cultural desire to inscribe with speed and accuracy, acted destructively, and distanced us from previous modes of both thinking and doing.

As an object replaces a mode of thinking, we consequently cede control to it. We often are encouraged to trust technological processes over our experiences. “Every instrument pilot will testify that one must learn to mistrust the senses and to trust the gauges even when every nerve insists that they must be mistaken” (Ferre 59). Even though there are circumstances where technology does a better job at observing than we do, as a society, we have become eager to fetishize technology and ignore how it distances ourselves from our unmediated experiences. We embrace our objects with open arms, not fully considering or realizing the effect they have upon humanity.

## **VI. The Accelerating Pace of Everyday Life**

In 1964, Gordon Moore, co-founder of Intel, came up with one of the most famous predictions of the 20th century: that the number of transistors which could be put in a single computer chip would double every 18 months. "Moore's Law," as it became known, which indicates an increase in computing power, has proven to be generally accurate. This prediction, not based on any scientific law or empirical metric, was instead tuned into something not yet measured: the accelerating pattern of production in the computer industry. But Moore's prediction extends past just one industry and taps into something much larger: that the pace of everyday life is accelerating.

Human cultures have thrived on the ability to adapt to solve new problems. If a ladder failed at the task of reaching the fruit on the top of the tree, a new ladder could be designed to operate more effectively. The design and redesign of objects gave humans a unique capability of rapid adaptability not endemic to other species. A species of bird whose beaks are too short to reach the bugs within the tree bark will have to wait out the long and arduous process of genetic evolution (and face the dire possibility of extinction) before the emergence of a trait that would produce physical manifestations to reach the insects. But object-wielding humans need not wait for natural selection to take hold because they are able to produce physical manifestations outside of a genetic framework. If fruit remained too high for us to pick, we could construct longer ladders. If the animal hide was too thick to pierce, we could design sharper arrows. Feedback from the shortcomings of predicating objects directly informs the construction of more successful objects.

As the industrial revolutions of the 19th and 20th centuries accelerated modes of object

production, mass production and expedient distribution, objects evolved faster. In turn, objects became more dynamically adapted towards their intended tasks. Complex objects could be built faster, and if they didn't fit well with their intended tasks, could be quickly redesigned and produced. In a mere century (only a sliver of the time in which humans have roamed the planet), automobiles evolved from clunky, slow, noisy, undependable horse-and-buggy-type objects to sleek, safe, fast, quiet, and reliable modes of transportation. This was no accident. The expedient development of these objects, directly informed by everything from the assembly line to the junkyard, led to more culturally-desirable automobiles. It is a direct result of method (meta-production).

The convergence of media, the design of reconfigurable tools, and the emergence of electronic objects have furthered this acceleration. Many of our objects (computers, phones, televisions) have no need to return to an assembly line for redesign. Better software can be uploaded, phone numbers can be reprogrammed and deleted, and channels can be changed in order to provide existing objects with new functionalities. Mankind, which once thrived because of the object evolution, now is being compromised by a over-paced rate of evolution. No longer do we have the time to consider the consequence of new products.

The entire reason why we streamline, automate, and optimize tasks isn't to create more work for ourselves, it is to make time for tasks that our technology can't do, like think. In his paper *No Time to Think* (2007), David Levy argues that that “the accelerating pace of life is reducing the time of thoughtful reflection” (Levy 1).

Technology is self-propelling, and at its current accelerated pace, it doesn't leave time for thoughtful reflection. It doesn't allow us to stop and consider its consequences. Many of the feedback loops present in previous modes of production have collapsed. There is always the next

product, the next experiment, the next gizmo. There is always the next e-mail, the next text message, the next phone call. "The pace of technology precludes a contemplative stance" (Keller 206).

"When commercial values such as productivity and efficiency become so pervasive and internalized, they crowd out other ways of being. Our very sense of humanity—full-bodied, spontaneous, spiritual—leaches away" (Bollier). As we continue to be enslaved by an ethos of "more-better-faster," we are drifting farther away from our capacity of reflection. The technological devices that are supposedly designed to connect us together instead disconnect us. "We now have the most remarkable tools for teaching and learning the world has ever known. How is it that we have less time to think than ever before?" (Levy). For a society which prides itself on creative thought, our technology reflects something different: repetitive thought.

"The 'information society' has a certain frenetic mindlessness to it, one that takes Henry David Thoreau's famous line in *Walden* to a new level entirely: "We are in great haste to construct a magnetic telegraph from Maine to Texas; but Maine and Texas, it may be, have nothing important to communicate." Twitter may be all the rage, but surely there is something pathetic about the ascendance of Twittering as our unstructured, person-to-person social time dwindles away" (Bollier). The incorporation of social technologies into our everyday lives have only accelerated and internalized this impersonal trajectory. Mobile phones, Facebook, e-mail, and the Internet have all served to make the maintenance of interpersonal ties more efficient. But is this really a good thing? The ease and accessibility of these technologies favor "thinking that is rapid, productive, and short-term, and crowds out deeper, more deliberate modes of thinking and relationships" (Bollier).

We have an inclination to surround ourselves with technologies which make tasks

simpler. But this comes with a harmful side-effect: when short-term actions are placed in the limelight, access to complex, reflective tasks are stifled.

In the context of object production, feedback loops which inform us of the benefits and consequences of previous objects are collapsing. We are inundated with the new generation of mobile phones before we can see and correct the problems of the previous generation of mobile phones.

As our objects become over-extended, pollute our experiential space, thought patterns, and ultimately move us towards a direction that is less connective, we must look for solutions. Levy suggests that an ecological approach to our media should be considered. We must start thinking about applying environmental rules onto our objects. We turn off the faucet when we are brushing our teeth to prevent needless drops of water from going to waste. Why can't we design objects which prevents our needless information from polluting our communication systems?

We all should be responsible for not just the intended effects of our communication practices, but also for misuses of our communication. In our daily face-to-face conversations we already practice this. Perhaps it is because we already have a cultural framework of what information-spreading is appropriate. Or perhaps it is because we suffer the immediate consequences of our conversation misuses. Or perhaps it is because our social capital is directly tied to offending communication as well as useless conversation. It is our cultural framework which encourages us not to swear in public, talk in theaters, or ask somebody if they are pregnant.

## VII. The Electronic Object

Perhaps it was innovation, such as the electric light, which caused many people to draw a line in the sand and declare that the taming of electricity was a paradigm of a new technological order. However, electricity was merely a suitable substrate in which to store information. The shift from analog, mechanical objects to digital frameworks in the 20<sup>th</sup> century not only brought about a dramatic change in the material make-up of objects, but delivered a whole new set of objects themselves—electronic objects.

According to Anthony Dunne, “the electronic object is an object on the threshold of materiality” (Dunne 11). It is a combination of physical and immaterial properties. As Dunne states: “the physical can never be dismissed” (Dunne 13). Dunne quotes Moles: “Every symphony has its compact disc; every audio experience its loudspeaker; every visual image its camera and video disc. Behind every outward image or symbol lie mechanical support, and if the immateriality of these images and symbols give rise to a new approach to the relationship between human being and object, the analysis will be one of the individual's connection with the material support underlying the new culture of immateriality” (Moles 274).

The problem with the electronic object is that its function intrinsically lacks a one-on-one relationship with its material form. The way a person perceives the affordances of a material object, a hammer for instance, largely depends on the explicit physical properties of the object. On the contrary, a electronic object's affordance is implicit, hidden within the flow of electrons, and requires an additional layer (a semiotic layer) to provide information corresponding to use. Their physical properties can not be readily 'indexed' to cultural and physical referents, and because of this, designers are required to artificially implement physical visual cues.

The difficulties arising from transducing material designs into immaterial 'interfaces' often lead designers to reconsider mapping skeuomorphs and affordances onto the virtual. The slider on the iPhone, for example, is based upon a mechanical function, but on the phone it is merely a virtual reproduction of the mechanical function. What the slider does, however, is implement an affordance which part of user experience. But this design strategy is problematic because it designs towards object function rather than object user.

As we design new objects, we need to be aware of not just the interactions that objects produce, but social and cultural context in which objects are embedded. In his publication *Hertzian Tales*, Anthony Dunne argues for an alternative future in the development of electronic products that is based more upon poetics rather than on technical functionality. His argument stems from the lack of cultural influence in the design and development of electronic objects.

Electronic products play a huge part in constructing our social and cultural experiences, but the technocracy which determines product designs does not adequately explore how these products may be able to further enrich our lives. Its interests are in selling new products that people will buy. Its focus is on optimizing performance and not on the cultural role of products.

Dunne suggests that the focus on performance optimization has often reduced the enriching aspects that these products give to our everyday lives. Digital cameras, for example, make photo taking efficient, and are relatively inexpensive, but are designed to limit their creative uses. As Dunne suggests, "we unwittingly adopt roles created by the human factors specialists of large corporations. For instance, camcorders have many built-in features that encourage generic usage; a warning light flashes when ever there is a risk of "spoiling" a picture, as if to remind the user that he or she is about to become creative and should immediately return to the norm" (Dunne 22). Dunne argues that product design shapes culture, and therefore, should

be focused more on the exploration the electronic object's influence upon existing social and cultural contexts.

Dunne suggests that we should create “post-optimal objects” and states that "if user-friendliness characterizes that relationship between the user and the optimal object, user-unfriendliness then, a form of gentle provocation, could characterize the post-optimal object. The emphasis shifts from optimizing the fit between people and electronic objects through transparent communication, to providing aesthetic experiences through the electronic objects themselves" (Dunne 35).

Dunne's approach to designing provides aesthetic experiences that should be considered in the design of future objects.

## VIII. Conclusion

In the present day, it is difficult to imagine a time when transatlantic journeys took several treacherous weeks. It is hard to imagine a time when news literally traveled at the speed of horse. The challenges and uncertainties of the past were just as real as the uncertainties we face today about our future.

As new objects take salient roles within emergent cultures, becoming integrated into the patterns of everyday life, they will continue to shape and replace our practices, experiences, and thoughts. In the present, we do not actively notice the effects of chairs, lights, and sidewalks. When we drive to work, we put little thought into our actions or the objects that enable them. Like a high-speed automobile and the locomotive which would have sent a person screaming for their lives in the 19<sup>th</sup> century, many of today's new objects, such as e-readers and hydrogen fuel-cell vehicles, although perceived as novel and uncomfortable, may too find ease in the cultural background.

As objects continue to evolve, they will continue to weather an interplay of political, cultural, and technological forces. The continued form and function will be dependent upon the aggregate conflicts of force.

Affordances will persist. There is a cultural desire to listen to music. Regardless of the form of future music players and the format of the inscribed music, there will always be objects which afford playability.

We should not overlook the ability of skeuomorphs to provide an ontological consistency and smooth out the designs of future objects. The skeuomorphs of the present are indicative of the cultural iconography of the future. Even if they contain no functional value,

they keep an ecological purpose to ease.

As electronic objects appropriate functions once reserved for the mechanical, the affordances of the mechanical world will be appropriated as well. Sliders, knobs, and buttons will be digitized and emulated on LCD screens.

As objects continue to evolve from analog to digital forms, the functional remnants of a mechanical world will continue to appear in virtual form in our electronic devices. The electronic will continue to replace the physical as electricity is further cultivated to satisfy our cultural needs and values.

## References

- Adams, Douglas. *Dirk Gently's Holistic Detective Agency*. New York: Pocket, 1991.
- Bauman, Zygmunt. *Liquid Modernity*. London: Polity Press, 2000. Print.
- Bollier, David. "More Better Faster!: How Our Spastic Digital Culture Scrambles Our Brains." *Alternet.org*. Alternet, 30 June 2009. Web. 10 July 2009.
- Chandler, Dani. *Semiotics: The Basics*. 2 ed. New York: Routledge, 2007. Print.
- Dant, Tim. *Material Culture in the Social World*. Buckingham: Open University Press, 1999.
- Dant, Tim. *Materiality and Society*. Buckingham: Open University Press, 2004.
- Dant, Tim, "The 'Pragmatics' of Material Interaction." *Journal of Consumer Culture* 8.1 (2008): 11-34. Print.
- Dant, Tim, "The Driver-car." *Automobiles*. Ed. Mike Featherstone, N.J. Thrift, John Urry. London: Sage. 2005. 61-79.
- De Certeau, Michel, and Luce Giard. *Culture in the Plural*. Minneapolis: University of Minnesota Press, 1998.
- Doctorow, Cory. "My Blog, My Outboard Brain." *Oreillynet.com*. O'Reilly Media, 31 May 2002. Web. 15 June 2009.
- Dunne, Anthony. *Hertzian Tales*. London: The MIT Press, 2006. Print.
- Ferré, Frederick. *Philosophy of Technology*. Athens, Ga: University of Georgia Press, 1995.
- Fuller, Matthew. *Media Ecologies: Materialist Energies in Art and Technoculture* (Leonardo Books). London: The MIT Press, 2007.
- Gessler, Nicholas, "Skeuomorphs and Cultural Algorithms" *Evolutionary Programming VII, Proceedings Of The Seventh International Conference On Evolutionary Programming*. Springer-Verlag, Berlin. 2002. 229-238.
- Gibson, James J. *The Ecological Approach to Visual Perception*. Boston: Houghton Mifflin 1979, 1986 ed.
- Giddens, Anthony. *The Consequences of Modernity*. Stanford : Stanford University Press, 1991. Print.

Hayles, N. Katherine. *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics*. Chicago: University Of Chicago Press, 1999. Print.

Kappelman, T. "Marshall McLuhan: 'The Medium is the Message'." *Leadership U*, 2001. Web. 15 June 2009. <<http://www.leaderu.com/orgs/probe/docs/mcluhan.html>>

Keller, Evelyn Fox. *A Feeling For The Organism: The Life and Work of Barbara McClintock*. New York: W.H. Freeman Publishing, 1983. Print.

Kittler, Friedrich A.. *Gramophone, Film, Typewriter (Writing Science)*. illustrated edition ed. Stanford : Stanford University Press, 1999. Print.

Lapham, Lewis H., and Marshall McLuhan. *Understanding Media: The Extensions of Man*. London: The MIT Press, 1994.

Lefebvre, Henri. *Everyday Life in the Modern World (Classics in Communication and Mass Culture)*. New Brunswick: Transaction Publishers, 1984. Print.

Levy, David M. "No Time To Think: Reflections on Information Technology and Contemplative Scholarship." *Ethics and Information Technology* 9.4. (2007). 237-249. Print.

McGrenere, Joanna, and Wayne Ho. "Affordances: Clarifying and Evolving a Concept." *Proceedings of Graphics Interface 2000*, Montreal, Quebec, Canada. 2000. 179-186.

Mead, George Herbert. *Mind, Self, and Society: From the Standpoint of a Social Behaviorist (Works of George Herbert Mead)*. New Ed ed. Chicago: University Of Chicago Press, 1967. Print.

O'Neill, Shaleph. *Interactive Media: The Semiotics of Embodied Interaction*. New York: Springer, 2008.

Silverstone, Roger. *Television and Everyday Life*. New York: Routledge, 1994.

Thompson, Clive. "Your Outboard Brain Knows All." *Wired.com*. Wired, 25 September 2007. Web. 15 December 2009.

Vihma, Susann. "On Actual Semantic and Aesthetic Interaction with Design Objects." *In Proceedings of 5th European Academy of Design Conference: Techne Design*. University of Barcelona, Barcelona, Spain. 2003. 1-7.