CRAFT AS A LARGER PURSUIT OF HUMAN HAPPINESS

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ABSTRACT

This paper aims to explore the concept of craft as it relates to the larger pursuit of human happiness. Starting with Aristotle's conception of craft and prudence developed in the Nichomachian Ethics, we will see how they are critical to his overall view of human happiness, but also problematic when viewed in isolation. For Aristotle, craft is concerned solely with the thoughts and processes that go into *making* (production) while prudence deals with the thoughts and processes that go into determining its best *use* (activity). By providing specific examples and supported by the notion of *affordance,* the aim of this paper is to show that craft already embeds in its very making multiple possibilities of use, and thus encompasses a sense of prudence. The arguments presented also aim to show that Aristotle's concept of craft and prudence recognize that human creative activity is indispensible towards achieving happiness.

ARISTOTELIAN CONCEPTION OF HAPPINESS: CRAFT AND PRUDENCE

"*Every craft and every line of inquiry, and likewise every action and decision, seems to seek some good*"
In the opening sentence of the NE, Aristotle puts forth terms that, as this paper will argue, are key to his larger ethical project: craft, action and good.

1.1. Happiness and human function

In the first part of the *Nicomachean Ethics* it seems apparent that for Aristotle happiness is tied to what he calls *human function*[1]. It is the search for a clarification of this *function,* or even the existence of such function, that will help us discern what true happiness, or in his words "*the best good*", really is and how it may be achieved. With his inductive reasoning, Aristotle argues that our constituting bodily parts all have a specific function; our eyes, our hands, our feet, undergo actions that are guided by their inherent function, and thus our actions as human beings should also be guided by some *special function*. Naturally, our function as humans cannot be the mere sum of the function of our parts, so Aristotle attempts to uncover what this function might be.

What emerges from this inquiry is that fulfilling our human function requires leading a certain kind of life; one that maximizes human capacity through action. In other words, while as humans we are dependent on our constituting parts, we are not reducible to them and our special *human function* emerges from exercising our capacity through a life of activity. In discerning what kind of activity might be characteristic to human beings Aristotle turns to what distinguishes us from other animal species, namely our capacity for rationality and practical reason. It is this capacity that enables us to live a good life – a life of happiness- when lived in accordance with *virtue*. Therefore our human function is to fulfill

[1] Aristotle. *Nicomachean Ethics*, Book1, Ch7

a life of *"activity of the soul in accord with reason*".[2] Importantly, however, "*reason"* for Aristotle does not refer to thought alone; for him thought is directed towards something – a goal- and as such is productive: *"Thought by itself moves nothing; what moves us is goal-directed thought concerned with action. For this thought is also the principal of productive thought"* [3]

Thus human function involves being moved, by thought, into an activity which, to fulfill our human function, must be something done "*well and finely*"[4], in other words, it is tied to the notion of virtue. To illustrate the relationship to virtue Aristotle provides the example of a harpist, who to fulfill her special human function must play the harp in the best possible way and be a *virtuous*[5] harpist. Similarly, again using induction, a rational being, has the function of being a *virtuous* rational being. But while virtue appears to be instrumental in achieving happiness and fulfilling our special function in action pleasure also plays an important role; "*proper pleasure makes an activity more exact"*[6]. This is as also pointed out by Irwin in the introduction to the *Nicomachean Ethics*, as we will see further on.

Aristotle's search for happiness, most often referred to as "*the* best *good*", is the search for something that has an end in itself. Every action or decision has an end, but an end pursued in its own right is more complete, and the more complete it is, the higher the good. Thus happiness is a performative endeavor involved with human function that has no end other than itself. It is this sense of completeness that Aristotle attributes to happiness which will help steer us away from the later account of happiness that emerges in Book X.

[2] Aristotle. *Nicomachean Ethics*, 1098a, 9
[3] Ibid., 1139b, 1
[4] Ibid.,1098a, 15
[5] Virtuosity here I not taken to mean what we understand it today- but rather fulfilling an action *well and finely*
[6] Aristotle. *Nicomachean Ethics*, 1175a,15

In this final book Aristotle reminds us again that happiness is not a state[7] but is found in activities in accordance with virtue. Surprisingly here he introduces the idea of contemplation as the supreme virtue. As discussed by Irwin in the introduction, our good is the good of the whole human being, and if happiness must be complete neither virtue alone nor pleasure alone can be happiness. Both are required for complete happiness.

Interestingly Aquinas' account of happiness supports the point made above, and in many ways clarifies Aristotle's own position. Happiness for Aquinas encompasses the bifold condition of something *created* and *uncreated*.[8] To clarify this he differentiates between the two conditions of our ultimate end; on the one hand there is the *end itself* that we desire to attain, happiness, which is an *uncreated* good,[9] and on the other there is the *use* we make of this end once acquired, and this is *created* happiness which takes place by acquisition. Man's happiness on earth is something created, through operations of the intellect that nonetheless demand operation of the senses[10]. This earthly happiness is *imperfect* and accepts the union of the body and soul, while heavenly happiness is *perfect* and culminates with the human mind united to God, independent of the senses. Perfect happiness is a purely intellectual endeavor.

Establishing this division between perfect and imperfect happiness allows Aquinas to have a clearer acceptance of earthly happiness as relating to the union of the body and the intellect, and not suggesting, as Aristotle does in the Book X, that it is only an activity of the intellect through study and contemplation. Thus Aquinas accepts that together with virtue there are other human capacities, such as *delight or enjoyment*[11], necessary for happiness in this world. Happiness achieved in this life requires

[7] Ibid., 1176a, 34
[8] Thomas Aquinas. Summa Theologica II-1, Q3, A1
[9] namely, God, whose essence *is* happiness
[10] Thomas Aquinas. Summa Theologica II-1, Q3, A2
[11] Ibid., Q4, A1

external goods and friendships, not as essential components but as necessary ones; whereas perfect happiness does not require either, since one sheds the *animal* body to become purely spiritual and intellectual.

Not having the benefit of this split conception of the world, Aristotle aims to elevate intellectual virtue to a higher status and often providing obscuring accounts of his philosophy of happiness. In this paper we will adopt Aquinas' conception of imperfect happiness to help put into focus Aristotle's view.

1. 2. Aristotle's concept of craft and prudence

The concept of craft plays an important role in Aristotle's ethical project, and we will argue is critical to the understanding of his concept of happiness. Some authors[12] have indeed argued that Aristotle employed the concept of *craft* at a much deeper level in his ethical thinking than is traditionally thought. While proving the veracity of this claim exceeds the purpose of this paper, it is worth pointing to the central importance the notion of craft has in Aristotle's larger moral scope.

Craft is the term most commonly used for the translation of the Greek *technē*, which seems to have its earliest meaning in the Indo-European root *tek* "*to fit together the woodwork of a …house*" [13]. Its earliest Greek meaning was closer "*house building*", which evolved into the contemporary understanding of the term as implying a profession that required a skillful making. While its meaning is closely attached to the notion of physical making, craft also encompasses what in contemporary terms we might refer to as 'artful' art of making or *design*.[14] An object is both designed and is crafted; sometimes these acts happen simultaneously, sometimes one precedes the other- but they are dependent on each other. It is the contention of this paper that *craft* embeds more than just physical

[12] Tom Angier, Technē in Aristotle's Ethics: Crafting the Moral Life, pp. viii, 176

[13] as described by Tom Angier in the preface of *Technē in Aristotle's Ethics: Crafting the Moral Life*

[14] Indeed, in this paper there is a latent understanding as craft tied to the idea of creativity.

making, even in the Aristotelian conception of the word. It is tied to human creative activity. Although it will be the notion of *prudence* that will help clarify Aristotle's view on this.

For Aristotle, craft is an intellectual virtue involving reason, just as wisdom is an intellectual virtue, but with an important difference with regards to the type of thought involved. Craft is limited because it is directed to the product (production) and not to the activity (action) that the product will induce. [15] While both action and production involve reason, they are very different in regards to their end; production implies working towards an end other than itself, while action is already complete as an end in itself.[16] Thus the Aristotelian notion of craft has to do with a process that results in something other than itself, and as such is tied to production and not action.

Further, craft for Aristotle is not determined by, or determining of, necessity,[17] rather it is completely devoid of any consideration of the *use* of the product. This is one of the main points that this paper aims to put into question, and will be explored in further detail in the second part of the essay. To begin the debate let us take a look at Aristotle's concept of prudence and how it ties into the notion if craft.

Earlier, we have seen how Aristotle differentiates between production and action with regards to the end that they have; production involving an end other than itself (the product) while action being the end in itself (the action). We have also touched on Aristotle's somewhat narrow view of craft knowledge as pertaining only to production, and giving crafted objects no authority over the activity (use) that they may ultimately have. On the other hand, prudence as explained by Aristotle deals with

[15] "*for every producer in his production aims at some [further] goal*" 1139b, 1
[16] "*production has its end in something other than itself, but action does not, since its end is acting well itself".* 1140b, 7
[17] "*…craft is not concerned with things that are or come to be by necessity*" 1140a

human concerns that are open to deliberation and is a good "*achievable in action*".[18] When Aristotle asks what kind of person can be prudent, interestingly he replies "household *mangers and politicians*" [19] which are occupations that don't necessarily produce anything, but their task (their human function) demands action. Thus craft and prudence are both intellectual virtues, but governed by the vital difference that also differentiates between action and production; craft is concerned with production and has an en end in something other than itself, while prudence is an action that has an end in itself. As such, prudence is more complete, and closer to perfect good (happiness).

Another way to focus the difference between craft and prudence according to Aristotle is by looking at the notions of the general and the particular. Craft implies a specific kind of knowledge that can be acquired as a general skill and then applied to particular instances of craft making. So a craftsman will be knowledgeable in the general area of his craft in order to apply that knowledge to particular instances and produce specific craft objects. Craft knowledge understood as pure production requires a movement from the general to the particular.

On the other hand, going from the particular to the general (which is the basis for inductive logic), implies being exposed to particular cases and through repetition, learning to make general inferences from those experiences. In Aristotelian terms this is acquiring knowledge *though action*, in other words, learning by experience. Unlike craft knowledge, this kind of knowledge is related to Aristotle's concept of prudence. Going from the general to the particular (craft) is something that can be taught and also easily mechanized. Indeed machines can be programmed with a set of simple instructions to output objects of incredible complexity, replacing the hand of a skilled craftsman. But going from the particular to the general (prudence) is something that cannot (yet) be substituted by a

[18] Aristotle. *Nicomachean Ethics*,1141b, 14
[19] Ibid., 1140b, 11

programmed machine; it requires experience.[20] Thus, knowledge set for a craft is narrow, specialized and transferable, whereas prudence is a general quality of one's judgment which is acquired with time.[21]

But is the task of a craft really just outputting a made object or fulfilled goal? What role does designing play? And how does this apply to the larger conception if a craft, such as professions of architecture or medicine that Aristotle often uses as examples? If prudence is about how a craft is being used, what about the designing of such craft? Doesn't the design of the craft imply or allow certain use?

[20] Although scientists are working on this, and are getting closer to developing robots that learn by experience.

[21] Indeed according to Aristotle young people do not seem to have prudence. 1142a, 12

TOWARDS AN INTEGRATED VIEW OF CRAFT

2.1 Shortcoming of Aristotle's perspective on craft

Aristotle himself saw the shortcomings of his concept of craft as only directed towards outputting: "*actions are not enough even in the case of crafts*"[22] He could foresee the difficulty in cases similar to those mentioned earlier where we could produce something by just by following someone else's instructions (as does the computer) or by producing something just by chance.

In the Aristotelian conception there seems to be a distinction between possessing a craft, and possessing a craft *prudently*. One could use a craft well (for good ends) or one could use it badly (for bad ends). The key to that 'use' for Aristotle seems to come from prudence. Prudence, being an end in itself, an activity, is either there or not there. One cannot really contend of using prudence well or badly, as this would simply result in being imprudent or having committed an imprudent action. Prudence is excellence in practical reasoning that has a clear view to an end. Craftsman can exercise their craft prudently by adequately putting their knowledge of the specific craft to use. However, practicing a craft well also implies having knowledge and a view of the aims of that craft. Using medicine to heal and architecture to build are the aims of these crafts, or rather; they are the *prudent* aims of these crafts. Medicine could also be, and has been, used to kill and architecture could also be, and has been, used to destroy.[23]

[22] Aristotle. *Nicomachean Ethics*, 1105a,22

[23] There are many examples of this; capital punishment uses lethal injection drugs with aims to kill, as do some cases of euthanasia and suicide.

'Prudent craft' seems to be an apt combination of these two concepts that Aristotle wants to artificially separate and view as independent of one another. But is this really possible? Doesn't a craft already have in the act of being produced, or reasoned towards production, a view towards an end?
Our thesis is that despite Aristotle's wish to separate the craft from prudence, craft embeds the idea of prudent craft; both in the process of making (design) and in the life it has once complete (use).

Once again Aquinas' development of Aristotelian thought help clarify Aristotle's sometimes confusing accounts. Aquinas conceives of human existence as essentially goal-directed, aiming towards the attainment of the final ultimate end, which is perfect happiness. All humans act with deliberate will towards this final end through actions, also referred to as movements that are composed of *the act,* which is the beginning of the movement, and the *passion* which is the end goal. Put in other words, *ends* in general seem to have a bifold condition: there is ***intention*** on the one hand; which moves the appetite and desire, and ***execution*** on the other; which is the act, or acts, that enables the movement. Taking this slightly out of context, and applying it to our earlier discussion about craft, the end of the craft has this bifold condition; the intention is what we referred to earlier as "design" (which we will see later is also linked to the final purpose), and then the "execution" which is the making of that design. The union of these two is craft.

Similarly to Aristotle, in Aquinas' view while all humanity desires and agrees that the last end is happiness, not all humans agree on how to achieve it, as some might think that it is through seeking riches or pleasure. While these can be supportive of the final end, they are not ends in themselves. Rather, good is most complete when desired by "a man with well-disposed affections"[24] i.e. a man of virtue. So for Aquinas too happiness is contingent to virtue. But he makes an important distinction, which again clarifies Aristotle.

[24] ST, Q1,A7

If we consider practicing a craft for bad ends, for example the end: “a house poorly built” we could consider two distinct ways of getting to that end; one could be that the craftsmanship that went into building that house was just not good- there was lack of knowledge (in design or in the making) of the craft; the other could be that the materials and labor chosen for that house were intentionally of poor quality, for instance, in order to save costs. In the first scenario we have craft used poorly- bad craft- and in the second however, decisions were made based on cost and not quality- these were imprudent decisions.

An example of this is what is happening recently with construction in China. In recent years, there have been a series of emblematic projects, designed by celebrated architects, that have caught on fire during construction. One such incident occurred in 2009 to the Guangzhou opera house designed by architect Zaha Hadid and was seen as an important political decision aimed at revitalizing and transforming the little known and in decline region. The fire was attributed to negligence due to accelerated construction processes typical of China. In other words, imprudent decision during the making affected the craft and threatened its very existence. This incident was of particular importance because it had a ripple effect that opening the debate between the quality of a craft and the quality of its execution, as well as how the two influence its activity once completed.

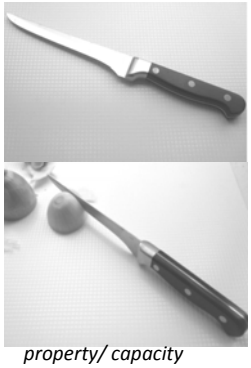
Thus, for something to come into being in the best possible way, or as Aristotle would put it, the most virtuous way; it not only has to fulfill the criteria of craft but also that of prudence. If we understand, as Aristotle does, that our end is achieving happiness as an activity, having failed in either one would imply having failed to achieve happiness. Thus to arrive to an end, one needs both craft and prudence; if either one of them fails the end will fail as well.

Naturally the best good (happiness) we may be after could also not be a virtuous one. We may be seeking wealth and pleasure and the best way to get there may indeed be by failing on craft and prudence. But this is why in book I Aristotle warns us of our "human function", and about needing to fulfill this function to achieve the ultimate good, happiness, by leading a virtuous active life. Happiness for Aristotle is achieved when humans reason well towards deciding the "best good", as he puts it: "*we cannot be prudent without being good."* [25]

2.2 Craft, Prudence and Affordance

Aristotle's distinction between craft and prudence is often echoed and questioned in disciplines where "the art of making" plays an important role. Use, necessity, function and purpose are terms that have slight variations in meaning and it is be important to point out their differences. But for our purposes we can look at Aristotle's idea of "prudence as an activity" involved with the notion of *use* of the craft/produced object.

The contention of this paper is that craft and prudence as elaborated earlier, in the context of a specific physical object, or discipline concerned with craft, cannot really be understood separately. They are different ways of looking at a set of issues but they are bound by those very issues. To illustrate this we can look at the distinction between a *property* and a *capacity* through the example of a simple man-made object which requires both craft and prudence; a kitchen knife.[26]



property/ capacity
craft/ prudence

[25] Aristotle. *Nicomachean Ethics*, 1144b For Aristotle, our happiness is contingent on all sorts of conditions , but everything we do is for the sake of happiness. This may appear somewhat naïve to a contemporary reader. Indeed, Aquinas has a clearer a sense than Aristotle regarding the question of how human beings can go wrong.

[26] Manuel DeLanda provides this example in "*Material Evolvability and Variability"*

A knife has a series of listable properties, such as being sharp, shiny, heavy etc, which are fairly easy to describe. On the other hand, the knife also has capacities (to cut) that need to be exercised in order to become *actualized*. So the capacity a knife has to cut things only becomes actualized when it is *used* and enters into relation with another body, say a loaf of bread, which in turn has the capacity of being cut. While there are a series of finite properties that a knife can have, there are an open-ended amount of possibilities for that knife to exercise its capacity when being used.

Thus, capacities are always relational and imply something about the way that the object is being used: the capacity to affect (cut) must always be understood in relation with a capacity to be affected (being cut)[27]. In other words, a property is a *state* that is characterized by finite relations of interiority; whereas a capacity is an *action* that implies interaction between agents characterized by relations of exteriority.

For Aristotle, craft involves producing something that has these listable properties, while prudence is related to the capacity that the object has in terms of how it will be used. Prudence is a relational quality that requires the object engaging the world- it requires being *used*. So far this seems coherent and plausible. But what seems find more problematic is Aristotle attributing craft with thought directed solely towards the production of the object (ie towards producing it's properties), and prudence being the thought that allows the object to have certain capacities (or uses). He does not understand prudence as a symmetrical notion; capacity to affect and be affected. Rather he conceives it as a one way interaction, determined by the capacity of a virtuous person to assign use.

The previous example allows us to see that this division has little relevance in the actual built environment. We might wish to use the kitchen knife to cut a block of titanium, but this one-sided intention is not matched by the capacity of the knife. It simply does not have the capacity to cut

[27] This is also how DeLanda explains Deleuze's concept of *affect*

through the block of titanium because it was not produced with the physical properties that would enable such use. In other words properties cannot emerge without an understanding of the capacities; craft cannot emerge without the considerations that Aristotle attributes to prudence.

There are instances where the production of the object of craft has, in its very making, capacities that afford ways of using and interacting with it. Indeed instances where the product of craft implies the activity, even if that activity is open ended and multiple, as are capacities.

The term *capacity* is closely related to the term *affordance* introduced by James Gibson within the context of ecological interactions[28]. Gibson distinguishes between the intrinsic properties of things and their affordances, which are *action possibilities* latent in the environment. These possibilities of use, are dependent on the capacity of both the environment and the agent engaging it. A built environment might have its own intrinsic properties determining, for example, how flat or how sloped, or how soft or how hard a floor is. But it is its *capacity* that affords the possibility of being walked on; a capacity that might not even be exercised if nobody ever walks on it. Affordances are also symmetrical, in that they involve both capacities to affect and be affected. For example, a chair affords someone who is tired the possibility to sit but it also affords other possibilities that are not necessarily tied to the "use" or "purpose" of the chair. We might use the chair to store a stack books, because having a horizontal surface it affords that use, it has that capacity, even if it was not intended or designed for that use.

[28] James J Gibson, The EcologicalApproach to Visual Perception

CRAFT AND NECESSITY

3.1 Craft prior to use: invention

Aristotle's view on craft and prudence which asserts that the production of an object and its use require different kinds of thought, become quite problematic when applied to specific craft cases. It would imply that a shoe maker is concerned with reason that relates solely to the making of the shoe, such as deciding the quality of materials and techniques used for assembly and joinery, with no consideration to the life that the shoe might have once complete. Is it really plausible to assert that the decisions taken during the process of making were not in any way informed by the use that will be made of it? Isn't the choice of materials contingent to the use that will be made of those materials? How could the shoemaker ever make a wearable shoe if the wearability was not in fact a primary concern? Clearly, one doesn't have to be a shoe maker to know that the thought involved in the act of making is intimately tied to the thought of the activity that will result from that making. However there are some interesting cases where the use of an object was only determined much after it was made.

The common expression *"necessity is the mother of invention*" is rooted in the assumption that inventions arise when society has an unfulfilled need and that it is this need (purpose or end) that drives the invention itself. While there are many cases of inventions arising to solve particular societal problems, we have tended to assume that inventions arise from the existence of perceived needs. Anthropologist Jarred Diamond questions this assumption; in fact he claims that:

> "*most inventions were developed by the people driven by curiosity or by a love of tinkering, in the absence of any initial demand for the product they had in mind. Once a device had been invented, the inventor then had to find an*

application for it"[29]

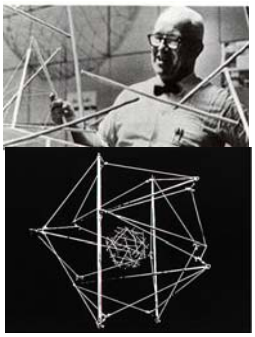
He gives the example of Thomas Edison's invention of the phonograph in 1877. When he first built it he published an article proposing ten different uses that his invention might have, including among others teaching spelling and recording books for the blind. But none of these uses included the reproduction of music. When people started using it to play popular music Edison objected to what he saw as a debasement of his invention. Clearly his invention did not end up having the '*virtuous'* use that he had hoped for; but assigning the use at this point was not up to him.

Society isn't always ready to adopt inventions, and sometimes, as is the case with Edison's phonograph the invention precedes our cultural readiness for it. But what is critical to point out here, is that the use of an artifact cannot be arbitrarily assigned to it just through a will or desire, even if done by Edison himself. The object itself has certain capacities that affords ways of being used and being interacted with. Even if these ways may not have been expected or previously assumed, they are there nonetheless latent in the object.

There have been many cases where artifacts and inventions were not used as intended by the original inventor or designer, instead other applications were projected onto them. The work of Buckminster Fuller is exemplary of this. Among his many inventions he developed the structural system known as *geodesic* domes, with the *virtuous* intention of providing practical and inexpensive shelter to resolve the world's housing problems. His self-proclaimed intentions were none other than: "*changing the world and benefiting all humanity."*[30] Surprisingly, however, and much to Fuller's disappointment, the first application of these structures was in the deployment of easy-to-assemble shelters for military

[29] Jarred Diamond, *Guns Germs and Steel*, p.244

[30] Indeed he saw his life as "*an experiment to find what a single individual can contribute to changing the world and benefiting all humanity."* New York Times article, June 15, 2008: "A 3-Wheel Dream That Died at Takeoff"



Buckminster Fuller with tensegrity models

camps and battle fields. Further, today his geodesic structures are associated with the entertainment industry, probably due to them being propagated around the world for theme parks and large social gathering spaces, such as the Epcot center in Florida.

Another of his invention is the tensegrity structural system. Curiously, given its resemblance to observed living cell formation, tensegrity models are being used today by biologists to study cell behavior.[31] This is certainly not a use that was anticipated by Fuller.

Indeed, manmade objects are very often tested and used for purposes beyond what they were originally designed for. Similarly, buildings and built spaces are frequently repurposed and used for ends that had not been foreseen; a building originally designed as a convent can successfully be converted into a high school with little change to its typological structure.[32]

3.2 Craft after use: *form follows function*

Looking at the other end of the spectrum, there are also examples that illustrate the reverse. This vision can be neatly summarizes with the popular motto "*form follows function*" that still has so much traction in the world on the built environment.

Paradoxically it was one of the American architects who is most associated with designing highly ornate tall buildings who coined the phrase "*form follows function".* In his text *The Tall Office Building Artistically Considered* Louise Sullivan writes: *"It is the pervading law of all things organic and inorganic, of all things physical and metaphysical, of all things human and all things superhuman, of all true*

[31] Unanchored Nucleated Tensegrity Model , Wyss Institute, Harvard. http://wyss.harvard.edu/viewmedia/71/unanchored-nucleated-tensegrity-model

[32] St. Stephen's school in Rome, is an example of this: was a convent and is now a high school

manifestations of the head, of the heart, of the soul, that the life is recognizable in its expression, that form ever follows function. This is the law." [33]

At the center of form-follows-function argument in architecture is an essay put forth in mid eighteenth century by a French cleric, Abbe' Laugier. In his *Essai sur l'Architecture* there appeared a very powerful illustration called 'primitive cabin' which illustrated his conception of the origin of architecture as formed only by tree trunks and branches. His thesis was that columns should declare their function and that all embellishments were a distraction to this virtuous function.[34] This illustration is pure form-follows-function. For those who felt, and still today feel, identified with it, it represented true architectural expression of human spirit, devoid of flourishing that distracted from its main purpose. Throughout history it has reappeared in architecture books and thesis writings as a reminder to return to pure expression of architectural function. Its power is in the radical nature of its message which stands in affirmation of form being a mere expression of function.

Abbe Laugier. Primitive Cabin

Another interesting punctual moment was in the early twentieth century when architect and theorist Adolf Loos wrote his influential essay *Ornament and Crime*, where he manifested that architecture and all applied arts had to do away with all ornamentation, which for him was merely a residue of barbaric customs. His manifesto largely driven by a repudiation of the florid style of the Vienna Secession, the Austrian version of Art Nouveau, had a very strong social and moral underlining. He felt that doing away with any kind of ornamentation was an important step in improving the human creative spirit and elevating culture beyond mindless frivolities. For Loos this lack of ornamentation was the embodiment of freedom from undesired ties. Coherent to his thesis, the work he created after the publication of this controversial essay was a vivid materialization of his theories. It clearly stood out from

A.Loos. House in Michaelerplatz

[33] Louis H. Sullivan. *The Tall Office Building Artistically Considered*, March, 1896. Louis Henri Sullivan (1856 –1924) was an was an influential American architect and critic part of the Chicago School, considered by many as the creator of the modern skyscraper.

[34] John Summerson, The Architecture of the Eighteenth Century, p15

the work of his contemporaries who at times just remitted to mockery, famously characterizing his work as aesthetically equivalent to a manhole cover. His creations were a manifestation of a *function* which for him was the embodiment of freedom and evolution: "*The evolution of culture is synonymous with the removal of ornament from utilitarian objects*."[35]

3.3 Use embedded in craft: affordance

Millennium bridge. N.Foster

A utilitarian structure, such as a bridge, provides yet another, third, perspective in the inquiry into craft and its use. Something very curious occurred to the London millennium pedestrian bridge[36] when it opened to celebrate the millennium. On opening day as people started using it and crossing over to the other side, it unexpectedly began to sway laterally in such an exaggerated manner that it was closed to the public only two days after opening. This unexpected lateral movement was attributed to a phenomenon known as *synchronous lateral excitation* whereby pedestrians crossing a bridge with small lateral vibrations, have an unconscious tendency to match their footsteps to the existing vibrations, thereby increasing the amplitude of oscillation and continually exacerbating its movement[37]. This tendency of a suspension bridge to sway is known in the military, indeed troops are required to break step when crossing them. What was unexpected is that the public using this bridge would tend to synchronize with its sway and begin walking in march-like formation. This unexpected *use* of the bridge required engineers to re-think its craft and obliged them to redesign it to include dampers and movement reducers. Shortly put, the way the bridge was used demanded a rethinking of its craft.

[35] Adolf Loos, *Ornament and Crime* in Programs and Manifestoes, p20

[36] a new footbridge across the Thames to mark the year 2000. The 1,082-foot bridge

[37] Steven Strogatz. "Theoretical mechanics: Crowd synchrony on the Millennium Bridge" 2005. Nature, Vol. 438, pp43-44.

Other projects, not necessarily utilitarian in scope, have attempted to explore this relationship in a more direct manner. *Choreographing Space*, is an art installation project designed and built with the idea that it would transform and adapt once it was interacted with. The aim was that the interactive canopy structure would both affect and be affected by the interaction of the user/ performer in the space, and that in turn it would affect the possibilities s of use and interactivity that the user could have.

Choreographing Space
e+i studio

Underlying the choice of these examples is the intent to show that there isn't a simple one-to-one relationship between the making and the intended use of craft objects, or crafts in general. Rather this relationship is governed by the same symmetry that was discussed earlier in the context of affordance. Namely, the act and thought put into the *making* and crafting, affects and is affected by the act and thought put into the *use* of the craft.

CONCLUSION

4.1 Structure of the argument

To briefly summarize the structure of the paper; the first part attempts to put forth Aristotle's conception of craft as described in the *Nicomachean Ethics*, which separates the thoughts and processes that go into the *making* of a craft from the thoughts and processes that go into determining the right *use* for the craft. This use is instead determined by a virtue concerned with the excellent practical reasoning; by *prudence*. Thus we have craft and production on one side, and prudence and use, or activity, on the other. We have also tried to show, with the help of some clarifications from Aquinas, that while prudence is an end in itself (and as such a higher good) we need both craft and prudence to have completeness in this world- to achieve happiness, or *best good*.

Aristotle's segregation of craft and prudence has allowed us to delve into the relationship between the 'making' and the 'using' of manmade artifacts (and craft-oriented disciplines such as architecture) and extract instances that might elucidate the different perspectives on this relationship. These examples, however, and our contemporary vantage point, allow us to elaborate a theory of craft supported by the notion of affordance. Our contention is that craft can be understood as already embedding a sense of prudence and latent possibilities of use. Craft already *affords* certain use.

4.2 Appropriations and assumptions

From the beginning of the paper, we have sketched out certain notions extracted from readings of Aristotle and Aquinas that have sometimes instigated tangent explorations. Supported by Aristotle's structure of happiness we have nonetheless had to appropriate and transform this structure in order to build arguments in favor of our thesis. We have extracted his notion of happiness and assumed it

equivalent to Aquinas' notion of *imperfect* earthy happiness in order to serve this purpose and allow us to discuss craft and prudence as complementary notions towards the fulfillment of human happiness. In having a model of thought migrate from one structure to another, we have inevitably made some elastic assumptions and conclusions that are not strictly speaking *Aristotelean*.
We have also had to use terms such as 'use', 'function', 'purpose' somewhat interchangeably, even though their meaning can be quite different in different contexts. This interchangeability of terms however should not threaten the integrity of the argument which really attempts to be broad and encompassing of a large conception of craft.

These appropriations and assumptions however have enabled an exploration into the much debated and contemporary problematic around the concepts of *making* and *use* of a craft[38] from a renewed perspective; one that is nonetheless supported by the structure of Aristotelain thought directed to the larger pursuit of human happiness. Latent in the arguments put forth in this paper is the belief that Aristotle's concepts of craft and prudence recognize the indispensability of human creative activity towards achieving human happiness.

[38] craft; understood both at the small scale of an artifact or manmade object and a larger scale encompassing an entire discipline, such as architecture or medicine

BIBLIOGRAPHY

Aristotle, Nicomachean Ethics, T. H. Irwin, trans., 2nd ed., Indianapolis: Hackett Publishing, 1999

Aquinas, Summa Theologica, Volume II – Part II, First Section. Fathers of the English Dominican Province, Trans.. New York: Cosimo Classics, 2007

Angier, Tom. *In Technē in Aristotle's Ethics: Crafting the Moral Life*. New York: Continuum International Publishing Group, 2010. Pp. viii, 176

DeLanda, Manuel. Intensive Science & Virtual Philosophy. New York: Continuum, 2002

_____. "Material Evolvability and Variability" in The Architecture of Variation by Lars Spuybroek, London: Thames & Hudson, 2009

Louis H. Sullivan. The Tall Office Building Artistically Considered, March, 1896

Summerson, John. *The Architecture of the Eighteenth Century*. London: Thames and Hudson Ltd., 1986

ILLUSTRATIONS