"Without application in the world, the value of knowledge is greatly diminished." Consider this claim with respect to two areas of knowledge.

As a child growing up, I understood the point of learning rudimentary science and mathematics to avoid coming across as particularly ignorant, but I failed to see the possible future use of concepts such as Pythagoras' Theorem in mathematics or the Steady State Theory in physics. From the age of 13, I was convinced that I was headed for a career in Law, and questioned the point of acquiring knowledge that did not directly assist me in my future profession. I held application in the world, specifically my future career, as the benchmark for the value judgement of knowledge. Although I still use application in the world as the main factor in evaluating knowledge, my understanding of application in the world has changed drastically, now allowing for the definition to differ in respective areas of knowledge. For instance, within the arts I define application as making relevant commentary about the state or future state of the world, while in the natural sciences I see application as making relevant and impactful changes to the natural world. For me, these applications are essential in determining the value of knowledge.

When we discuss whether knowledge is a means to an end or an end-in-itself, I tend to look to art, specifically visual art, as an example of the latter. Beauty is a vital part of the judgement of art, and many artists emphasise beauty and subjective appeal over all considerations, including application, in the judgement of an art piece's value. In the early 19th century, the French phrase *l'art pour l'art*[1] marked a movement to divorce art from any didactic, moral, or utilitarian function, but to see it as autotelic. The development of the

[1] Translation: Art for Art's Sake

'cult of beauty' rejected the notion that art had a duty to make relevant commentary about the world. Although Russian, William Kandinsky's Composition VII exemplified the *l'art pour l'art* movement as he believed he could *'reduce his compositions to arrangements of colours, lines, and shapes… believing [they] could exist autonomously in a painting without any connection to recognizable objects'*.[2] Kandinsky believed that no attempt should be made to extrapolate an external meaning from his work. Although a popular movement, it attracted many justified critiques, specifically from English art critics John Ruskin, who saw art as having a duty to comment on the world, and viewed inapplicable but aesthetically pleasing art as having little to no value. This utilitarian belief, led to the emergence of a counter movement: *beauty for truth's sake* which emphasised the necessity of application in evaluating art. American playwright James A. Herne believed that beauty was not essential in art; instead truth and application played a more vital role. He notes that "*it is not sufficient that the subject be attractive or beautiful… it must first of all express some large truth*".[3] For artists like Herne and Ruskin, the attempt to remove application from the value of art marked an attempt to remove an essential property. Even in our modern day world, we see the manifestation of these two competing movements: The fashion industry as the modern incarnation of *l'art pour l'art*, art that emphasises aesthetics over all things; and films like 12 Years A Slave, which depicts brutal scenes of horror and exemplifies Herne's belief that in art, truth should play a larger role than beauty. I feel that when art can, it should make meaningful and relevant commentary on the world. To limit art to just its aesthetics is to close off the possibility inherent in artistic creation, I strongly believe that this is one of the main reasons why the movement failed to take off in the 19th century, and

[2] Unknown (1995) Modernism: Art for *art's* sake. Available at: http://arthistoryresources.net/modernism/artsake.html (Accessed: 29 January 2016).
[3] Murphy, B. and Posnock, R. (1987) American realism and American drama, 1880-1940. Edited by Albert Gelpi. United Kingdom: Cambridge University Press.

why its modern successor, although monetary successful, faces criticism on its superficiality. The works may be possibly breath-taking, but its lack of application is a disservice to the inherent possibility of art, thus reducing its value.

However a discussion exists outside the European context. Within an African context for instance, many art historian and artists themselves have emphasised how inseparable application and value are, as 'African art often appears in ritual contexts that deal with the vital moral and spiritual concerns of the human condition'.[4] African art historians argue that European concepts like *l'art pour l'art*, does not apply, as African art is made '*with a purpose*', and it must be judged, if not solely but, largely with purpose in mind.[5] It is a tool and a means '*to transmit cultural values and maintain social control*'.[6] The Mende Masks of Sierra Leone are examples of African art pieces made for a particular spiritual application: initiation rites into adulthood. The theomorphic mask design is meant to embody the female ancestor spirits of the Nowo tribe. To judge the masks on their beauty alone, would be an attempt to ignore the cultural importance of application and attempt to use European frameworks in the African context. Many factors affect our judgement of art, and if one culture chooses to value application over aestheticism, it seems imperialistic to use one set of cultural value judgements on a different culture, especially considering there is no universal criteria for judging art. This suggests that the value of art, to a degree, is culturally determined.

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[4] Belton, V.-J. (1998) 98.03.02: African art and aesthetics. Available at: http://www.yale.edu/ynhti/curriculum/units/1998/3/98.03.02.x.html (Accessed: 17 January 2016).
[5] Kuhn, C. (2012) Research guides: African art: Key concepts. Available at: http://libguides.msmary.edu/c.php?g=11479&p=60098 (Accessed: 8 January 2016).
6 Ibid.

In contrast to art, when we discuss an area of knowledge where value seems largely to depend on its technical application, I look to the natural sciences. University grants and research funds seem to target scientific areas with the largest potential for application, money for the most part is distributed according to what area is making, or could potentially make, the greatest relevant and impactful change to the world around us. The American National Institute of Health, the largest single funder of biomedical research, spends the most money on cancer and heart disease.[7] This is a good example of how the monetary value of knowledge seems directly proportional to its impact. However, university grants are not exclusively given to areas of science that directly impact our lives. John Hopkins University, has led the world in research funding for 35 years in a row, but although large percentages of their $2.2 billion fund is given to medical research, they routinely fund more obscure research, like a subset of astrophysics concerned with finding how black holes can block black stars.[8] This research, although interesting, currently seems to not directly make any relevant or impactful change to the natural world, yet the knowledge we gain from this space exploration is deemed valuable, or at least worth a significant amount of monetary backing. Advocates for funding for particular areas of science like astrophysics emphasise how potential application is just as important and valuable as immediate application. If science takes widespread impact to mean value, then it becomes difficult to determine whether a scientific area with larger potential impact should receive more funding than an area of science with more immediate but less widespread impact. Whether or not we should value research into nuclear energy and alternate sources of power over research into

[7] Mullin, E. (2014) Top 15 NIH-funded disease areas. Available at: http://www.fiercebiotechresearch.com/story/top-15-nih-funded-disease-areas/2014-07-22 (Accessed: 25 January 2016).
[8] O'Shea, D. (2014) Massive black holes can block formation of new stars, study finds. Available at: http://hub.jhu.edu/2014/10/22/black-holes-star-formation (Accessed: 26 January 2016).

maintaining already catastrophic levels of climate change is debatable. The former seems to promise a solution for our current energy crisis, and has the potential to affect the world, while the latter seems a small scale pragmatic concession that doesn't have the appeal of a grand complete solution. However, I believe that while research in to the former is important, more focus needs to be played on these smaller areas that have more realistic rather than potential applications. Mostly because we are unable to tell how much of the estimated potential application will actually come into fruition, and we are left judging the value of an end-product before we see whether it is achievable, or worth the amount of effort put into the production. The accuracy of our prediction is always up for debate.

Advocates of widespread funding, emphasise the more abstract philosophical application. Space exploration for instance, may give us better information about our place in the universe and those possible future scientific discoveries may inform facets of our daily lives, like our motivation, personal ethics, or even religion. Although an old example, Galileo's discovery of the heliocentric model of the universe caused a paradigm shift. They argue that these paradigm shifts could come from a number of research areas and to limit the funding of research to areas we deem currently to be the most pressing would stifle the possible future discoveries which could come from any area of science and lead to similar paradigm shifts. Although valid, this optimistic world-view doesn't take into account the need for pragmatic deliberation in science, as funding is not unlimited. Scientific research is capable of causing paradigm shifts and future discoveries may possibly affect our perceptions and philosophical understanding of the world, but not only is this largely based on speculation; it also fails to take into account other areas of knowledge whose application is directly linked to such matters, like ethics and religion.

When we talk about the value of knowledge, I still believe application must play a vital role in our consideration. However, the form this application takes must not and cannot be universal. To judge art on the criterion we use to judge science seems a useless endeavour, as the frameworks are completely different. Even within these areas of knowledge, we must consider cultural impacts along with possible future applications, however, we must ultimately be pragmatic in our judgement of value, especially within the natural sciences, as human predictions of potential value may be miles off the reality, and gambling funding and monetary value on predictions may prove more harmful than useful.

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