# Technology 3 14785



What is technology? Technology as applied science and engineering clearly presents a relevant but limited view. It is, perhaps, a better definition of ' technique'. The notion that what designers do with technology is to simply apply scientific knowledge would be to misunderstand both what science and technology is. While the issue of science will be addressed below, suffice it to say that because design cannot be value free, neither can technology in the hands of a designer. Missing are the realm of consciousness and judgment; value and ' will' remain untouched.

Jose Ortega y Gasset, in his essay "Thoughts on Technology", presents a fuller view that reflects technology as going beyond pure application of empirical knowledge. He says: "Everything becomes clear when we realize that there are two purposes of technology: "One, to sustain organic life, mere being in nature, by adapting the individual to the environment; the other, to promote the good life, well-being, by adapting the environment to the individual. "Thus Ortega y Gasset distinguishes technology which is for survival from technology must be recognized as going beyond minimal existence. In doing so, technology becomes integral with using our environment for what we see as good; values generate technology.

Carl Mitcham, a noted technology scholar, also sees ' will' as the core of technological activity. He identifies technology with three categories: " technology-as-knowledge (thought), technology-as-process (activity), and technology-as-product (object)". These categories, however, do not pursue the reason for the why of technology. Mitcham insists that one must pursue the question about the origins and the meanings of technology, and thus the nature of volition.

David Billington establishes technology as consisting of two sides: machines and structures. Through this categorization, Mitcham's object world is brought into play with Ortega y Gasset's technological ' adaptation of the environment' (the structure). Although Billington is attempting to create distinctions between machines and structures, he begins by noting a close interdependence of the two " because structures are built by machines, and machines have structure to hold them together". This rather obvious connection is the basis for presenting their essential distinction; structures are static and permanent, and machines are dynamic with a short life-span. He argues that change has been accepted over permanence and our connections with the past have been severed in lieu of our emphasis on the dynamics of the machine world. "We have neglected such ideals as repose, permanence, uniqueness of locale, and patience, all in our efforts to change, to adapt to change, and to mechanize life " It is significant to note that he places structures (architecture) into a particular place & shy; environmentally dependent & shy; distinguishing it from the machines that are designed to be independent of their environment. This is critical to architects because it also places an understanding of technology within the realm of place-making, a fundamental responsibility of an architect.

This issue of context, both physical and psychological, is an important one. The example of the hearth in a home serves to illuminate the issue. The hearth was the center, a focus of warmth and family life. Because machines exist to reduce our burden in life, altering the traditional hearth (its https://assignbuster.com/technology-3-14785/

operations, efficiencies and safety) has logically placed it within the realm of a machine. These positive gains have been accompanied by a loss of a connection to the character of a place that was the center of family life. The stove is now present in the kitchen as a machine, independent of its environment and not able to evoke nor support the making of a place. It is a functional object now disconnected from its past and from its ability to contribute to family life. It has been banned from the " structure technology" of permanence and tradition, and resides now in the dynamic " machine technology" of performance. In this sense, the stove as machine has become unresponsive to the environment it is within, unconnected to its context in the fullest sense. The design of a place to gather family life in all its complexities is fundamentally different than designing a machine to cook food on.

This realization strikes at the heart of technology's relationship to architecture. If architecture becomes more environmentally independent, then it follows that it becomes more like a machine. If it is more like a machine, it cannot realize its full potential as a structure to re-orient technology towards a human significance that embraces values of place. Understanding technology in this sense reveals the very nature of architecture as technological event and technological event as human event.

Billington continues by comparing the 'Structure and Machine' categories to the 'Art and Science' duality. He links structures to art, whose evaluation lay in "...qualification, individual works, and forms..." 13 while tying machines to scientific inquiry, a process that relies on data and analysis. This is another attempt to connect a specific understanding about technology to a larger https://assignbuster.com/technology-3-14785/ context of society through conditions of our technological world. The argument Billington makes is at one level basic and not complete, but useful nonetheless.

Another view of technology's relationship to science is found in Carl Mitcham's third technological category of knowledge. While there is no intention of entering into the What is Knowledge guestion, one can select components of that question in order to clarify the relationship between technology and science. Science gives the most accurate description of our world. 14 Equating technology and science defines technology as applied science. It is true that science provides a set of laws upon which we act but it is not a sufficient definition for technology. I. C. Jarvie, in his essay " Technology and the Structure of Knowledge" asks: "For what really is applied science? It is the applying of abstract theories to the world." 15 Albert Borgmann suggests that science has the ability to access itself in the search for a matrix of laws while technology is the transformative potential of these abstract principles. 16 Jarvie places technology closer to invention rather than applied science and initiates a critical discussion of the difference between scientific truth and technological effectiveness. "Technology does have somewhat different aims than science, it aims to be effective rather than true & shy; and it can be the one without the other." He continues that there are " sharp differences created by making the aim of an activity effectiveness rather than the truth" and because effectiveness can be true, false or unknown, it is not pure science but is closer to invention. He states: " It seems to me that the knowledge generated by an inventor is not on a fundamental level in the sense that pure science is. What it is, is sort of

ingenuity in bringing together separate pieces of mechanical and other information and applying them to a particular problem... A special kind of ingenuity and mechanical intuition seems to be the property of the inventor, a talent seemingly very different from what makes the pure scientist.

Jarvie also states that technology is specific while science is general. This builds upon Billington's thesis about the nature of a specific locale as an essential part of the 'structure' component of technology. Jarvie uses an architectural environment as an example. " The technology of house building in Greenland, Tokyo, and Arizona is quite different because of the environments. If you consider some of the basic problems technology constantly grapples with, such as food, shelter, and transportation, you will see how the demands that are made on technology and the kinds of solutions it suggests are environment-specific... Where science in a way puts the question to nature, technology puts the question to society and nature." 18 Here he extends the whole argument to a larger guestion of social relevance. Thus the connection between specificity of place and the general well-being of society is made through differentiating the technological and the scientific. And although Jarvie did not elaborate on the origins of technology within the realm of volition, he argues effectively that technology is distinct from science (and is thus not applied science), it is specific (and is thus environmentally dependent and place-based), and its effectiveness is integrally tied to human values.

The relationship of technology to what architects do reaches into and beyond practical considerations. Although concerned with need, the world of technology is established as a powerful presence in the environment through https://assignbuster.com/technology-3-14785/

thought, activity, objects, survival, consumption, will, invention, place, and values. In addition, these components establish technology as fundamental to existence because of their cross-disciplinary natures. They establish technology as something more important than construction rules for building because they are both imaginative and empirical.

Hans Jonas in his essay " The Practical Uses of Theory", may gives some insight into what the use of technological theory might be. " The ultimate end of all use is the same as the end of all activity, and this is twofold: preservation of life, and betterment of life, that is, the promotion of the good life." 19 That the practical application of technology ensures survival is true and essential, but it does not guarantee the good life. Only an endeavor to respond to the human condition can lead to an architecture whose technology is complex and relevant. In other words, technology must transcend the mundane.

In conclusion, Louis Sullivan's statement presented at the beginning of this paper is re-visited. His commitment to " the powers of vision, of imagination, of intellect, of sympathy with human need" indeed transcends the banal and presents a powerful and appropriate context in which to approach technology in architecture. Other frames of reference that place technology outside of the human condition, outside of the making of place and outside the realm of value necessarily fall tragically short of the responsibilities of the architect. This is so because it cannot lead to an understanding of technology. It cannot provide an optimistic base from which to design and it cannot traverse traditional boundaries of disciplines. In the end, Sullivan's desire for architects to " create poems in stone" is exactly what gives it https://assignbuster.com/technology-3-14785/ value. As a valuable and optimistic act, architecture has the potential to

serve humankind both in survival and in celebration of spirit.