

**CULTURE OF TECHNOLOGY:
THE INDIAN EXPERIENCE**

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ABSTRACT

This paper discusses what we could possibly mean by a culture of technology, specifically drawing upon the relationship of Indian culture(s) with technology. In the Indian context, any discourse on technology has to address three issues, that of ancient Indian technology, technology and the colonial discourse and the cultural manifestation of technology as exhibited, for example, by the prevalent practice of offering prayers to machines. By looking at these three aspects I argue that technology finds its forms of expression through the medium of culture. It is this expression which goes to constitute a 'culture' of technology. The Indian experience with technology clearly exemplifies how different meanings accrue to technology because of societal and cultural interactions. Finally, following Lyotard's observations on modern art, I argue for a similar understanding of technology as a 'sublime sentiment'.

I. Introduction

There are diverse views held on the use of the phrase, 'Culture of technology'. In general, I believe we can identify three distinct positions related to culture of technology. One is that technology is culture neutral, that is, the domain of technology is independent of the culture it is placed in. Two, a more intermediate position that technology when placed across different cultures exhibits different characteristics. Three, a form of cultural determinism, which essentially states that technology is as much a cultural activity as other human activities. The first position is largely held by scientists, technocrats and others of similar persuasion. The second position has been argued for by a large number of social scientists and grass root activists, especially from the developing countries. The strongest support for the third position comes from the postmodernists.

There are two major problems which I would like to clarify before further discussion. Both of them have to do with the confusion inherent in the terms, culture and technology. What is culture and what is technology? Since the aim of this paper is to look at the Indian experience with technology I shall only briefly touch upon these larger questions.

In this paper, culture is seen as the domain of human activities of a particular community. This includes their eating habits, dress codes, moral and ethical norms, religious and social rituals, private and family values, the narrative of the public domain, the structure of their society and so on. All these human activities are specified by certain historical, traditional, philosophical and geographical forces. The claim that some activity is culture-neutral implies that the specificity of the world-view of the community does not play an essential role in a culturally neutral activity. Note that this does not mean that these cultural activities, like eating habits and dress codes, cannot be transplanted across cultures. Rather, we have seen this happen across the world in the case of food habits, cultural norms and values and so on. The ability to transplant an activity across cultures is not a sufficient reason for it to be seen as culturally neutral.

It is much more difficult to understand what we mean by technology. Technology stands for a plethora of 'things': machines of various sizes and shapes, products of machines which themselves perform various functions and consumer products which carry a validation by being a product of something 'technological' (like sports shoes, climbing equipment and so on). It is also generally believed that any

material product associated with and probably arising from a scientific enterprise is technological, thus making the link between science and technology explicit. The belief that technology is culture-neutral means that all these which go to constitute technology is independent of the world-view of the community in which it is placed in, does not have to change its 'form' in order to accommodate, for example, the historical and philosophical positions of the community.

Having said this, I must emphasize that it is difficult to pin any clear definition of technology which fulfills its sphere of meaning. I shall come back to this problem of thematizing technology later on in my discussion on technology as a sublime sentiment.

To me, the way to understand the notion of 'culture of technology' is to first acknowledge that both culture and technology are defined in terms of the meanings which accrue to them. Technology is the domain of meanings we give to it and those implied in the way we talk about it. Our response to technology and our relationship with it is nothing more than the domain of meanings we ascribe to it and which informs the way we understand and use technology. Thus, to understand what technology means is to look at the narratives we form about technology. These narratives create the culture of technology. The view that technology is applied science is one such narrative.

Why is there a reaction against understanding technology as a cultural activity? What does technology lose if we allow that it is a cultural activity? Being a cultural activity does not mean it is not different from other activities like eating habits and dress codes which are different from each other but are both seen as cultural activities. I believe that technology can continue to retain a techno-logical narrative even as it allows for an intrinsic 'culturality'. I shall attempt to argue for this position by looking at the Indian experience with technology.

Assuming that the meaning for technology lies in the narratives we hold about it, what is the narrative which makes us hold the position that technology is culture-neutral? I would like to isolate three clear arguments within this narrative.

One, is the tendency to equate technology with its functionality. That is, the view that technology is culturally neutral follows from the position which equates technology with functionality and nothing more. Consider this simple example of washing machines which are fast becoming quite popular in India. Functionally, a washing machine washes clothes. But the set of meanings associated with an object called washing machine is more than its function. It has within its sphere of meaning

cultural ideas of washing, labour distribution of washing within a household, resource specific constraints of water and electricity, private and public spaces for drying and so on. The work pattern of a household changes with the introduction of a washing machine. This work pattern is very different when compared to other societies. There are many constraints under which the machine is allowed to fulfill its functionality. For example, where water supply is not assured through the day, washing machines which need flow of water can only be used at appropriate times when there is water flow. In India, 'semi-automatic' machines are very popular because they allow the possibility of using these machines even when there is no water flow in the taps by manually pouring water into the machine with the help of buckets. These are also popular because public and cultural habits of drying clothes are still very prevalent. Thus, if we collapse technology into its work specificity and then argue for its culture neutrality we are missing the point altogether.

The second dominant element in the narrativity of culture-neutrality is technology's link with science. Through this link technology establishes a claim to truth and following science, assumes these 'truths' as being independent of culture. In taking a stand of cultural neutrality, technology is appropriating to itself the epistemological status of science.

There are problems with this link. It is not clear, even in the case of 'truths' in science, that such a culture independent realm of reality and truth can be accessed as claimed. Even granting this claim to scientific truth, how does this follow in the case of technology? The activity of technology is not to generate truth claims about the world, rather it is most importantly an activity which allows us an handle to 'operate' in the world. Operating on and negotiating with the world are very different activities compared to describing and theorizing about the world. This confusion between science and technology is further aggravated by mistakenly referring to technology as 'applied science'. It is this mistake of tying up technology with the philosophical preoccupation of science that engenders the view of technology as being culturally neutral.

The third narrative element is the creation of an image of technology, exhibited most prominently in the colonial discourse, as an 'objective' parameter to compare different cultures in order to legitimize colonization. For technology to function in this role it has to be culture-neutral. For, it is by being outside all cultures that it can be used to compare and create hierarchies based on technological

progress. This kind of 'objectivization' of technology has played an important role in making technology seemingly neutral to culture.

Thus to question the a-culturality of technology is to question,

1. The undesirability of isolating functionality from the whole range of activities involved in reaching that functional end,
2. The position of technology vis a vis the scientific enterprise and its role in establishing scientific truths and
3. The objectivization of technology.

It is also to understand the complexity of technology as a domain whose members range from an electron microscope to a washing machine. For the domain as such it is difficult to find common epistemological grounds based on 'science' nor is it even desirable. For this much is clear: the struggle to understand technology in terms of cultural parameters is essentially a project which questions and critiques its privileged link to epistemology. If technology is decoupled from this link will it still be seen as being culturally neutral? Is the project of technology an epistemological one? It is very important to remember that in the cultural domain epistemological arguments do not play a dominant role.

There is also a prevalent feeling that technology-transfer across societies somehow 'proves' the culture neutrality of technology. I think this view is misguided for the simple fact that many cultural activities get transferred, appropriated and modified across societies. Among these are cuisine, dresses, music, literature and so on. In technology transfer, there is not only a movement of objects of technology but also 'objects' of the cultural discourse. These objects of discourse can (and perhaps need to) modify the new culture in order that the objects of technology 'function' in the same way as they used to in the original culture. The fact that technology can be transferred into different communities is not proof of the culturally neutral aspect of it. It is because technology is not culturally neutral that transference of technology never works the same way across societies¹.

I believe that the above discussion captures the important narrative elements of the view that technology is culture-neutral. In this discourse it seems reasonably clear that there are gaps to be filled. It also appears that we cannot push for a strong position of culture-neutrality of technology based on the above arguments. They are not enough to establish the intrinsic link between culture and technology. One has to adduce more reasons, along the lines described above, in order to thematize the culture of technology. I am particularly interested in doing this by looking at the Indian

experience with technology. I believe that this interplay between technology and culture as it occurs in the rich and complex cultures in India has interesting insights into technology and is perhaps the best example of exhibiting how technology is inherently cultural. The example with the washing machine given above also reflects this complexity. The Indian experience with technology richly illustrates the need for a discourse of technology which goes beyond mere functionality and instrumentality.

Any discussion of technology in the Indian context must take account of three different aspects related to it. The first is to understand technology in ancient India in a proper perspective, second, to exemplify the connection between modern technology and the discourse of colonial India and finally to study the cultural elements intrinsic to technology. I illustrate the latter with the example of the prevalent habit of 'worshipping machines' in India.

Technology in ancient India is a very good example of how 'technologies' with no explicit link to modern science have and can flourish thus questioning the facile link between science and technology. It is a paradigm for technologies outside the gamut of modern science even as it says something about the essential nature of technology itself. The discourse of technology in colonial India is an important factor in understanding why culture neutrality has been so vehemently claimed on behalf of technology. This has very little to do with technology per se, and has more to do with creating 'objective' parameters for comparing civilizations and thus validating hierarchies of societies. The example of offering prayers to machines ties the arguments together by explicating how the set of meanings which go to create an image of technology gets enlarged through cultural interactions and appropriated into the cultural realm. This appropriation is possible only because technology is intrinsically cultural in character. Through this, I enter into the postmodern discourse and argue that technology should be ideally seen as belonging to the realm of the 'sublime'.

II: The Discourse on 'Indian' Technology

Increasingly there is a strong need to understand technology over and beyond its genesis in the 'modern' West with its concomitant link with science. In looking for the genesis of technology in the industrial revolution or within the praxis of science, there is a negation of technologies which do not belong to or arise from this historical and scientific tradition. Ancient Indian technology is a very good example of this negation.

Indian technology here refers to technological progress made in ancient India without being based on an epistemology arising from modern science. Examples of this are the synthesis of steel, zinc distillation, manufacturing of dyes, chemical technology and a whole host of other such processes and products (Alvares, 1991). The presence of these technologies in ancient India highlight the problem of the link between technology and science. Is there a possibility of technology which can arise outside the boundaries of modern science and not validated by it?

There is a worry, especially among some sections of the community, that reconstructing ancient 'Indian' technology is an activity filled with problems. Primarily, they are worried that this glorifies a lost civilization in order to appropriate it for modern political purposes. I don't believe that any historical reconstruction can escape its being put to use for certain contemporary ends. But having said that I must also confess that one must extrapolate carefully from what can be historically authenticated and what conclusions one makes from such records.

Having qualified myself thus, I do believe that there is very clear 'proof' of a high degree of technological sophistication in areas like metallurgy, chemistry, textiles and so on. I mention this not in order to glorify ancient Indian civilization but merely to ask: what does this say about the character of technology such that it could flourish in a system which was totally divorced from modern science?

Without going into an elaborate justification, let me state that I believe this character of Indian technology illustrates something about modern technology also. There is this commonly held belief that there was no methodology or theory underlying this Indian technology. There are two responses to this view. One is to do with the link between method/theory and technology: is there always a theory behind any technology? This view cannot be sustained when we look closely at modern technology also. The link is quite confusing most of the time. The other is to do with the truth value of theories upon which some technologies are based. That is, if technologies arise out of some theory then does this prove the veracity of that theory? Is it not true that one can have 'wrong' theories generating useful technology? For the most part, I believe that the link between theory and technology is a tenuous one. It is not enough to say that Indian technology has no validity as technology because the theories of modern science were not the basis of it. There is the possibility that this ancient technology could have been purely 'empirical' but the complexity of technological processes do not seem to imply a simple rule-following picture. The neat picture of simple correspondence between technology and

theory (as also exemplified in calling technology 'applied science') is largely to find an epistemological validation for what is a complex interactive phenomena.

The lesson from this is that technology should be seen from a much larger perspective and not restricted to some confusing links with modern science. Indian technology in this sense should be seen as a technological enterprise similar to modern technology. The character of technology that both embody is the way in which technology functions as 'tools' to get a handle on and operate in the world. By doing this, both arise from and respond to the cultural situation they are situated in.

III: Technology and Colonial India: Historical lessons

Historical lessons are filled with difficulties and open to many misinterpretations. Fully aware of this, I isolate some elements of the history of industrialization in India, not to make any points about colonialism but because these historical pointers allow one to understand how industrialization, and the relationship with technology in general, becomes a cultural activity. In particular, I would like to establish my position that technology is seen to be culturally neutral largely due to the colonial ideology² as exhibited in the discourse on technology.

I use history here not as an overarching discourse on colonialism. Historical 'facts' are chosen selectively in order to consolidate my position that a powerful and influential image of India was created for the Europeans essentially by a few individuals with very clear agendas of their own. This image strongly influenced the subsequent image of technology in India and their legacy continues to be seen in the ways we respond and react to technology even today. I believe that it is important not to underestimate the power of these image-makers and planners.

The following discussion draws upon the work of Michael Adas on technology (Adas, 1989). As is well known, up to at least the late 17th century, the response of the European adventurers was tempered with awe of the material and technological progress of Indians (Adas, Alvares). A perceptible shift in this image of the Indians underwent a change, subtly at first but dramatically later, primarily influenced by the industrialization of Britain. What is of fundamental importance to this discussion is the way in which technology began to be used as a norm to compare and create hierarchy of civilizations. Technology became a validating mechanism used to 'prove' the superiority of Britain and Europe over Asia and Africa.

As far as India is concerned, two historical processes stand out, both of

which happened contemporaneously. One was the steady disintegration of the Mughal empire, proliferation of wars, famine and disease in the sub-continent and two, the onset of the 'industrial revolution' in Britain. It is in this conjunction that one can begin to understand early industrialization in India and also its lessons for understanding technology today.

There is of course the problem of making sweeping generalizations when one takes recourse to selective historical events. Keeping this in mind, I look upon the above two 'events' as important markers for it is in their dynamics that one begins to see the formation of an image of India as a land which had to be redeemed by the British. It is in the disintegration of India and the establishment of technology, as power and mastery over nature, that the first clear validation of the superiority of the British began. Technology and science began to be understood as 'objective' tools of comparison between societies.

Such an approach is clear at the end of 18th and early 19th century. Increasingly, technology and science were used as validating mechanisms to reiterate the superiority of the English. There had also been claims of the English being a superior civilization based on their arts, literature, religion and so on but none of these activities could establish a comparison of civilizations as 'objectively' and as powerfully as technology could. Even religious superiority was tempered by this acknowledgement of technology - David Livingstone looked upon railroads and telegraphs as God's gift to the chosen Christian few. He also regarded these inventions as 'breaking down barriers to Christian conversion' (Adas; 206).

The impact of such beliefs should not be understated. Adas points to the enormous influence which a few writers, who wrote extensively on India, exerted on British administrators and others. One can, in a sense, trace back the incoherent understanding of technology (in India) today to the skewed view of those powerful voices.

Probably the most decisive influence in this matter was James Mill. His book, 'History of British India' (1817) was one of the strongest critiques of Indian society. It was a book which selectively used enormous information in order to propagate the Utilitarian views on political economy, among other things. Science and technology are repeatedly emphasized in this book in order to reassert the backwardness of the Indian civilization. Technology, by this time, was increasingly used as the best measure of a civilization. Mill's book had a tremendous impact - it was a must reading for those who were on their way to India. It strongly influenced

the British administrators in India. Mill was probably the most influential image-maker of India in Europe, of his time (Adas; 166).

Mill was also one of the earliest to link material achievement to the notion of civilization. His ideology based on Utilitarian tenets stressed education, legal reform and free trade. Adas makes the important comment that Mill (along with a few more influential writers) were self-made men who had worked their way up from 'families of modest means' and suggests that their views were shaped by their personal histories. He points out that their 'individual struggle to grow' suggested to them that change was the most important characteristic of any civilization. The tension between change and stasis had been repeatedly used to present a picture of Indians as being 'inferior' to the English. Colonialism was strongly validated by the need to change a society which supposedly was mired in superstition and tradition. The emphasis on change, I believe, was most strongly established by the technological developments in Europe rather than any other single factor.

If we accept that writers like Mill were the strongest influence on British administrators, then we can situate the ideology inherent in Mill and others as the underlying ideology of Indian industrialization and consequent understanding of technology within India. This means that the reasons for industrialization were based on an imposed image created to uphold colonialism, based on religion and social convictions of the powerful few, as also on the psychological and historical forces which shaped these individuals. In the case of industrialization this has been clearly enunciated by those British administrators who were instrumental in the industrialization process in India.

Two Governor-Generals of India in the 19th century exemplify this. In the thirties, Lord William Bentinck, looked upon technology as the medium through which Indians would be civilized. The emphasis on power and subjugation as part of colonization shifted to a self-imposed responsibility towards the ruled. This responsibility, founded perhaps in a theological doctrine of grace and 'saving', consisted in 'pulling-up' the unfortunate to the level of the more fortunate. And since the most clear indicator of this gap was exhibited through technology and science, industrialization became a means of saving the people of India and bringing them on par with the West. Bentinck, for example, viewed the steamboat as 'a great engine of moral improvement' (Adas; 224). His successors too 'shared his faith in the power of technology to effect a "complete moral revolution"' (Adas; 225).

The other prominent Governor-General, Dalhousie, in the fifties, is more well-known for propagating such a view. He was the man behind the introduction of railways and telegraph in India. Other than various economic and political reasons which apparently motivated the introduction of railways, the ideological reason of saving India and the belief that technology was the prime motivator of global equality should also be noted. Dalhousie believed that only this imposed technology could 'shake India from its lethargy and alleviate the poverty and backwardness of its masses' (Adas; 225). Social revolution (or reorganization?) as breaking down of caste barriers was also seen as an added inducement for such processes.

This very sketchy historical account is given in order to understand the motives behind the early industrialization in India. Industrialization introduced into India by the British shows all the above characteristics of domination, means towards 'upliftment', hopes of facilitating religious conversion, personal ideologies on change and economy, simplistic meanings for tradition and so on. All these were to a large extent dependent on the construction of a belief that technology was indeed the indicator of civilization, of growth and progress. This in turn was based on the belief that science spoke about absolute 'truths' and was culture-independent and that mastery over nature (and other humans) as exemplified by technology constituted a clear proof of superior cultures. In this sense, science and technology were used in the late 19th and early 20th centuries to give 'unbiased proofs' of the Westerners' superiority.

These conclusions are important to understand the technological milieu in India. The validation of science and technology continues to rest on the belief that they are culturally neutral. I shall not even attempt to enter this contentious debate regarding science but in the case of technology this is questionable³. Industrialization which consisted in importing technology to uplift the natives to a predefined Western conception of progress and development continues to inform the 'catching-up'⁴ arguments for industrialization today. Any imposition of an industrial model brings with it not just a set of machines but also the image of the maker. With the historical distance this is clear in the case of early industrialization in India but a similar process continues with much of industrialization now. Science and technology continue to be seen as the prime parameters of civilization at the expense of other world-views which are often dismissed as subjective and therefore irrational and arbitrary.

IV: The culture of technology: Offering Prayers to Machines

Technology expresses itself through culture. These expressions say something about technology as well as the medium of culture. In one sense, it is this self-expression of technology through the medium of culture which constitutes what we may call as culture of technology. This also captures the idea of one entering into a relationship with technology, an expression so forcibly used by Heidegger (1977).

Technology enters culture with a restricted set of meanings. Placed in a cultural context, open to the gaze of its subjects, the domain of meanings keep getting enlarged. This enlargement of meanings manifest in the different ways we handle, refer to and talk about technology. This is what it means to enter into a relationship with it (Sarukkai, 1995).

Thus technology reflects, even as it sometimes distorts or amplifies, certain cultural traits, thus constituting a culture of technology. Culture of technology is not a 'mixture' of technology and culture; rather it is a co-constitution of technology and culture. If we continue to believe they are separate it is only because we privilege a particular narrative of technology.

In the Indian context, the formation of this culture of technology can be seen in the set of meanings which get attached to technology. I have given the example of a washing machine and how it derives a whole plethora of meanings which essentially 'create' a 'washing machine' which is quite different from the washing machine in another culture. The Indian experience with technology is replete with such examples. Rather than list these examples, I shall discuss one activity which captures the spirit, to a large extent, of these different examples. This activity also constructs a different narrative for technology and it is within this narrative that the 'culturality' of technology gets clearly expressed. This activity is specific to the Indian context and is, I believe, rarely seen in other societies. I refer to the phenomenon of offering 'prayers' to machines.

On one particular day in the last week of September, a festival is celebrated all over India. This festival is called 'Ayudha Pooja'. Ayudha literally translates into weapons and pooja is offering worship. This festival is celebrated both in private homes and in factories and offices. On this day, all 'material' objects in the house including fans, vehicles, kitchen gadgets and so on, are cleaned, annointed with sandalwood and other pastes and prayer is offered with flowers and camphor flame,

these being typical ingredients in the worship of god. In the factories, similar worship is done for the machines including computers, phones, fax and vehicles. In the case of vehicles, the worship is more elaborate. One can see on that day buses, motorcycles and autos cleaned and being driven around with flowers decked all over them. Some vehicles even have music system with blaring loudspeakers attached to them.

This festival is followed faithfully even today. (Although this is primarily a festival for the Hindus, such religious interaction with technology occurs in the other Indian communities also.) Government offices, public and private factories and most other institutions are closed on this day. The usual practice consists of a get together by all the workers who then join in the offering of pooja to the designated objects in the office/factory. After this, they are given some offering and the remainder of the day is declared a holiday. Ironically, even in some premier scientific institutes the staff follow this ritual towards the laboratory equipments, computers and the like.

This kind of ritualization of technology does not happen on this day alone, although it is the one day of the year in which it is officially acknowledged as such. Rituals related to this offering of prayers to machines has spread quite rapidly in the Indian society and is no longer confined to this festival day. Normally worship is performed to vehicles on two separate occasions. One occasion is when new machines are brought into the house or office, including vehicles, computers, washing machines and so on, there is a prayer offered to it similar to that on the festival day. The other occasion is offering prayers, primarily to vehicles, on other days of the year. I believe that this worship to vehicles and machines is getting more established even in the face of attacks by some that this activity is a superstitious and ignorant one. In fact, in temples, there is a fair amount of professionalization associated with this ritual now.

Let me illustrate with an example which I believe is a good representative of what happens across the southern part of India, and perhaps across the country itself. There is a small temple near my institute in Bangalore. This temple's presiding deity is Amman, a powerful goddess. In the last few years the temple has grown from being a small room under a tree to a big temple with lots of 'modern' construction. On two or three days a week, and particularly on Fridays, there is a good collection of vehicles, of all types, parked in front of the temple. I have often seen upto 60-70 vehicles on many occasions. The vehicles range from two wheelers, autos, buses and trucks. There are some new vehicles but there are also many old ones.

The priests of the temple deal with the crowd in this way: one priest comes out with a pooja plate and goes to each vehicle, smears pastes and places flower on them, breaks a coconut if offered by the worshipper and offers camphor flame in front of the vehicle. This offering of camphor flame mimics the offering of prayers to the god's idol. The rituals of worship to the vehicles follow, to a significant extent, the rituals of worship to the gods⁵.

V: Technology as a 'Sublime Sentiment'

How do we understand this? The simplest answer is to say that Indians are by and large religious and they transplant this religiosity into the domain of machines. Some people, mostly the 'rationalists' and scientists, have seen this as another manifestation of superstition inherent and flowing out of 'tradition'. Some others might claim that the penchant for finding gods everywhere is a part of the Hindu tradition as well illustrated in its myths and stories. Thus offering prayers to machines is but offering prayer to god because god resides in machines and other material goods. I don't believe this explanation is a sufficient one because of the neglect (including various kinds of 'pollution' acts which occur within the vehicle) which strongly informs the relationship these people establish with the machines.

There may be various other reasons to explain this. These explanations may place this act within religious and cultural domain even as they leave technology out of it. One explanation may be that one offers prayers to vehicles in the hope that the driver/passenger is safeguarded in his or her travels. But none of these explanations are complete, consistent and coherent. In the case of the above explanation one can ask, why is not enough to offer prayers to the idol rather than go through the whole mimetic process in front of the vehicle? And why are they done to kitchen gadgets like grinders and so on? Why are not people 'worshipped' in similar manner? There are various other questions arising from this but it will take me too far away from the points I wish to make.

What does this particular activity tell us about technology? It may be argued that it tells us more about the religious habits of the Indian (not just Hindu) society than about technology. I think we will be making a mistake if we try and remove technology from this act and place the act within the practice of religion. As I mentioned in the beginning of this section, technology derives its meanings by expressing itself through culture (and that, especially in the Indian context, also

implies religion). The practice of offering prayers is just this expression of technology through culture. Offering prayers to machines establishes a different kind of relationship with machines, basically enlarging the domain of beliefs we hold about technology in order to enable us to deal with it in a manner suited to us. I would strongly argue that a typical Indian reaction to technology, including a kind of 'indifference', which sometimes looks like incompetence, clearly exhibits the culture of technology through and within which we understand and use technology.

I find that the modernist discourse of technology does not allow us new avenues needed to reflect upon technology which take into account the diverse ways through which we relate to it. I have already argued that viewing technology as a parameter to compare civilizations, its link to science and to 'objective' truth, rationality and so on, are typical of the modernist discourse on technology. When the modernist discourse comes across these diverse ways through which technology expresses itself through culture it removes them from the realm of technology because it does not fit into the ideological position which this discourse has of technology. We have to go beyond the modernist discourse to find meaningful ways to understand this complexity of technology. I believe that postmodernism has done this effectively. It has forcefully argued for looking at technology not only through categories of modernity but also through its intrinsic connection to culture, media, language and so on.

I do not intend to enter into the labyrinth of the postmodern discourse. I would like to argue that activities like offering prayers to machines signify something profound about technology. Lyotard, tries to identify the 'spirit' of postmodernism by using the idea of the 'Kantian theme of the sublime' (Lyotard, 1984). His concern is not about technology but about modern art and literature. I believe that this idea of the sublime captures the complexity of technology as experienced in the Indian context.

"The sublime is a different sentiment. It takes place, on the contrary, when the imagination fails to present an object which might, if only in principle, come to match a concept. We have the Idea of the world (the totality of what is), but we do not have the capacity to show an example of it. We have the Idea of the simple (that which cannot be broken down, decomposed) but we cannot illustrate it with a sensible object which would be a "case" of it. We can conceive the infinitely great, the infinitely powerful, but every presentation of an object destined to "make visible" this absolute greatness or power appears

to us painfully inadequate. Those are Ideas of which no presentation is possible... They can be said to be unrepresentable." (Lyotard; 78)

The ambiguity in dealing with technology as reflected in the above examples arises because of the simple fact that we are unable to match our conceptualization about technology to the objects (representatives) of technology. It is here that one finds a strong link between art and technology. One of the important concerns of art has been to present the unrepresentable and 'to present the fact that the unrepresentable exists' (Lyotard; 78). Technology is also a presentation like art, a product as well as a process. Every technological 'object' is an object akin to objects of art. In this presentation of technology, there is the background of the unrepresentable which makes the presentation itself possible.

It is true that we have an idea of technology. When asked to point out to objects corresponding to our conceptualization of it we are able to point at some representatives of technology. But there is no possibility of subsuming this conceptualization and the presentation of technology. There is always an inherent gap in this presentation. Although Lyotard says very little about his examples, one can infer the direction of his arguments. The Idea of the world and the Idea of the simple are not purely abstract terms; if they were so, then every 'Idea' would correspond to this sublime sentiment. The important point is to note that we can show corresponding 'objects' which stand in relation to these concepts but the match is 'painfully inadequate'. This is what distinguishes these Ideas from abstract and artificial ones like Unicorns or ghosts. In our relationship with technology we are always confronted with this conflict.

I believe that it is the response to such a conflict which essentially drives the creation of culture of technology which is manifested in its complex interplay with other cultural activities like religion. Offering prayers to machines is a search to present the unrepresentable in technology; a way to find forms of expression for the inadequacy of presentation of technology and the process by which one bridges the gap between 'product' and 'concept' thereby taking it into the realm of the sublime. It is not surprising that the uneasiness which is caused by this conflict is eased by taking recourse to a 'form' which is associated with solace - namely, rituals and simulated religiosity. This is yet another point which is close to Lyotard's remarks about art. "Modern aesthetics is an aesthetic of the sublime, though a nostalgic one. It allows the unrepresentable to be put forward only as the missing contents; but the

form, because of its recognizable consistency, continues to offer to the reader or viewer matter for solace and pleasure" (Lyotard; 81).

Thus offering prayers to machines must be seen as an activity which reinforces a view that technology should be recognized and understood as a sublime sentiment. Linking 'religion' to technology only emphasizes the recourse to 'solace' when faced with the nature of the unrepresentable. The kind of 'solace' one looks for depends on the culture one is embedded in. I do not believe that this conflict about technology is present only in the Indian culture. What really differs is the response to this conflict in different cultures. As far as 'Western culture' is concerned, technology has been ritualized in very specific cultural ways⁶.

The Indian response in terms of its awkward relationship with technology, including the cultural habit of offering prayers to machines, only point to the growing system of beliefs which accrue to technology. This is a project which may not fit within the modernist discourse but that is for the better. There is no need for technology to stand as culturally neutral adjudicator between competing cultures or get too intimately tied in with the preoccupations of scientific epistemology. It is in this conjunction, of offering prayers to video games, that our understanding of technology will reach a desired level of maturity.

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Notes

1. The dominant belief about the neutrality of technology pushes societies and cultures into adapting to technology rather than the other way around. This I view as the objectivization of technology, where a non-objective system is made to look objective by this kind of cultural adaptation. The Indian experience with technology makes this adaptation more graphic. We know that a machine from the US works at 110 volts whereas for the machine to work in India we will need an adapter to convert 110V to 220V. Analogously, we need cultural adapters to properly understand the role of machines across cultures.

2. I do not want to enter into a discussion of what constitutes ideology and the problem of making visible the 'invisible' ideology. Ideology as used in this paper does not need more clarification than the following remarks by Zizek (1994): "We are within ideological space proper the moment this content - 'true' or 'false' (if true, so much the better for the ideological effect) - is functional with regard to some relation of social domination ('power', 'exploitation') in an inherently non-transparent way: the very logic of legitimizing the relation of domination must remain concealed if it is to be effective. In other words, the starting point of the critique of ideology has to be full acknowledgment of the fact that it is easily possible to lie in the guise of truth." (Author's emphasis.)

3. In this context, it may be useful to look at how technology in colonial India was intrinsically linked with cultural categories. Adas points out that a dominant reason for the invention of watches (and other precision instruments, some as a consequence) had to do with the monastic culture in Europe (Adas; 60). Control over time was established essentially through watches. Accuracy, increasingly, became an obsession not just with respect to time but with measurements in general. This perceived control over time was mistaken for control of a primordial element of nature. More interestingly, the lack of such accurate control among other societies like the Asians and Africans, was argued to be decisive proof of the primitive status of these people. Records of the European descriptions of Asia and Africa continuously refer to the lack of a consciousness of clock-time which supposedly proved the backwardness of these people.

It was similarly argued in the case of space also. Control and mastery over space, one of the reasons why railways were looked upon with such awe, was also seen to prove the superiority of the Europeans. It is interesting to note the comments of G.O. Trevelyan, a civil servant, who 'observed that in India all signs of civilization disappeared beyond one hundred yards on either side of the railway track' (Adas; 228). Even today, accuracy is seen as the hallmark of science and increasing accuracy as pointers of 'higher' civilizations. This world-view, for this is what it really is, of domination over space and time, arose out of a particular ethos of a society at a particular time. This also modified the culture of the societies into which it was imposed. As Adas remarks, once time was commodified and use-value ascribed to it, 'bells and clocks changed the European work patterns' (Adas; 250). It also helped in expanding the domain of conceptual categories like lazy and so on in relation to this particular world-view. Such categories were used as legitimization for colonization and subjugation of other communities.

4. Rather than use the phrase 'catching-up', I prefer to see this process as 'pulling-up'. Catching-up implies that the lesser developed nations are of their own will developing to catch-up to the more developed nations. But in this race, the definitions of development itself arises from the developed nations and the rules of the race are designed to keep the distance constant or at least make it near impossible to catch-up. So it is not a game of catch-up that the developing countries are playing. Instead, the phenomenon is best described as 'pulling-up' - they are being 'pulled-up' to higher hierarchical levels. This acknowledges that unless they have their own conceptions of progress and development they are playing games whose rules will not allow them to win. The pulling-up process, quite rightly, places the onus of responsibility of growth and development on the ones who are pulling them up. 'Catching-up' seems to be a convenient euphemism for this process.

5. There is also the phenomena of pictures of gods adorning the insides of three and four wheelers, both private and public. In two wheelers, it is quite common to see stickers of gods or related symbols stuck on the vehicle. This habit is widespread and is followed by Hindus, Muslims, Christians and other religious denominations. I have seen this across the spread of the country.

6. These have been best discussed by the postmodernists. It would take me too far out of the purview of this paper to list out this creation of a culture of technology in the Western (the 'developed' West) countries. The postmodern categories of simulation, seduction, performativity, the role of the mediascape in the context of technology etc., capture the complex character of technology in a postmodern society.

For example, Kroker (1992) situates the individual as no longer the possessive one who is 'consumer par excellence' but rather now a 'possessed individual as itself an object of consumption'. No longer is technology satisfied in its role of conquering nature but is fast enveloped in a desire to conquer the social world too. Appropriate, therefore, as Kroker remarks, the will to technique, in this postmodern world, 'achieves its aestheticized point of excess'. This excess gathers technology, not as an alien outsider, but as a 'sign of the possession of the body and mind'. The individual becomes a 'technologically constituted self which is both a condition for the preservation of, and a constitutive justification for technological society'.

Also related to the sublime is the nature of reality and presentation of it in art. In the case of technology, virtual reality (and its cultural links in the developed West) is a good paradigm to represent technology as a sublime sentiment. Virtual reality overturns 'rules' which define reality. The loss of referentiality corresponding to technology leads to a situation where reality disappears as the criterion of presence. It creates objects of reality as commercial products and presents the unrepresentable not in terms of categories of experience but as pure experience itself. Technology as pure experience is the search for the sublime sentiment of this totalizing world of technology. This response is a cultural response specific to the particular culture of the late capitalism which generated this technology.

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