

The Hand-Crafted in the Age of Artificial Intelligence

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The motivation for this essay arises in part from my own experiences and practices over the last seven years or so. In part it arises from the response of students to two courses I have been offering. These are:

- i. An introduction to pottery
- ii. An introduction to weaving.

I have been offering the course on pottery for five years. There has been a steady increase in the numbers of students wanting to register for this. The studio infrastructure allowed for a maximum of 25 students till last year. As a response to a strong protest from a student who insisted that the registration process was unfair, I doubled the number of students with the agreement from all of them that they would contribute to the additional infrastructure needed (a few additional wheels). So, last year 50 students registered for the pottery course. This term I was told that some students had queued up since 1AM at night so that they made it to the list of 50, when registration began at 9AM. This was touching, not because I was doing something special with the course, but because the contact with clay and earth that pottery offers, seem to have some magical strength in it. After all, it is a tradition that dates back more than a thousand years. Watching a potter shape clay is as mesmerizing as spotting a snake – one simply cannot take ones eyes off the hypnotic motion.

My own practice in pottery, has only made it more interesting over the years. With each passing year I notice my own imperfections on the wheel, with greater clarity. This is not as technical as it might seem. It has more to do with a sense of harmony with the clay and the earth. As the interaction is also enjoyable, this lack of perfection is not discouraging. It becomes evident that all limitations in this regard are internal to me. Accompanying this positive kind of dis-satisfaction is the possibility of working on the same thing for years to come.

When I was a student here, I had the opportunity of listening to Jiddu Krishnamurti. Professor Shankar and Professor Lal had invited him and he had spoken at the convocation hall. I do not recall much of what he said on that occasion. I later heard him speak at the Sir J.J. School of Art. There was something in his demeanour that intrigued me enough to later spend time in some of the schools that he had setup. I also read some of his writings more carefully. Of the many things that he said one statement made a strong impression.



“Man has given importance to technology. He has given his time, energy, thought in that direction. And man has given very little time, thought and energy in any other direction. He does not say I am going to find out what I am, why I behave like this.”

This statement of Krishnamurti struck a chord in me. Despite being a student of science and technology, I have felt that many of the problems that they set out to address would be better addressed if our approach was different. When I take an auto-rickshaw from outside into the IIT Bombay campus, sometimes the auto-wallah mentions that the campus is so different from Mumbai. On such occasions, I get a glimpse of the daily stress of driving for twelve hours in traffic and wonder if the city-planners had really paid attention to the design of the city. Could there not have been more trees and fewer cars? Yet much of our attention is focused on better dash-board design and improving the user experience of automobiles. We label the design of cities as a “wicked-problem” and imply that design that is truly needed, is perhaps not possible. To ask, what could prevent large-scale migration, is a question that we have not paid sufficient attention to. Instead we think in terms of widening roads, adding fly-overs, building metros and so on. I suspect, that if our city-planners and policy makers practiced pottery, their approach to development would have been refreshingly different. But I have no proof for this. It is merely a hunch. I remember the lines of Leonard Cohen. He said that cracks are useful – because it through these that the light comes in. I would like to believe that these hunches are like the cracks that Cohen speaks of.

In order to be a little more analytical let me draw up a table that has three parts. The first column lists some of the attributes that describes the pre-industrial era when people lived as tribals or in villages. The second column lists certain attributes of the industrial age, which can be said to begin around the 15th or 16th century C.E. The third column lists a few attributes that one may associate with the post-industrial era. It would be accurate to observe that after independence from the colonial rule, though India chose to embrace modernity, it may be best described as being pre-industrial, industrial and post-industrial even in today's times. Indeed, the Eastern notion of time itself is not a linear one.

Pre-industrial (Raw Intelligence)	Industrial (The Awakening of a New Intelligence)	Post-industrial (The Age of Artificial Intelligence)
Farming	Mechanized farming, Fertilizers	Mechanized Farming, GM Seeds, The Privileged Organic Farmer and Consumer
Cooking	Cooking, Processed Food	Cooking, Processed Food, Fortified cereals
Pottery	Declining Potter Communities, Industrial ceramics	Industrial ceramics, The Privileged Studio Potter
Weaving	Declining Weaving Communities, Power-looms	Power-looms, Disappearing Weaving Communities, The Privileged Weaver
Mud-houses	Cement and Concrete, Multi-storeyed housing	Skyscrapers, Slums, The Privileged Farmhouse Owner
Walking	Bicycle, Automobile, Planes	Personalized Automobiles, The Privileged Cyclist, The Privileged Walker
Oral Communication	Written Communication, Printing Press, Books	Decline in reading books, Audio-visual communication(Digital / Satellite) The Privileged Oral-Communicator
Bio-mass, Solid-Fuel	Oil, Electricity	Conventional Electricity, Renewables The Privileged Off-the-Grid Consumer, Artificial intelligence

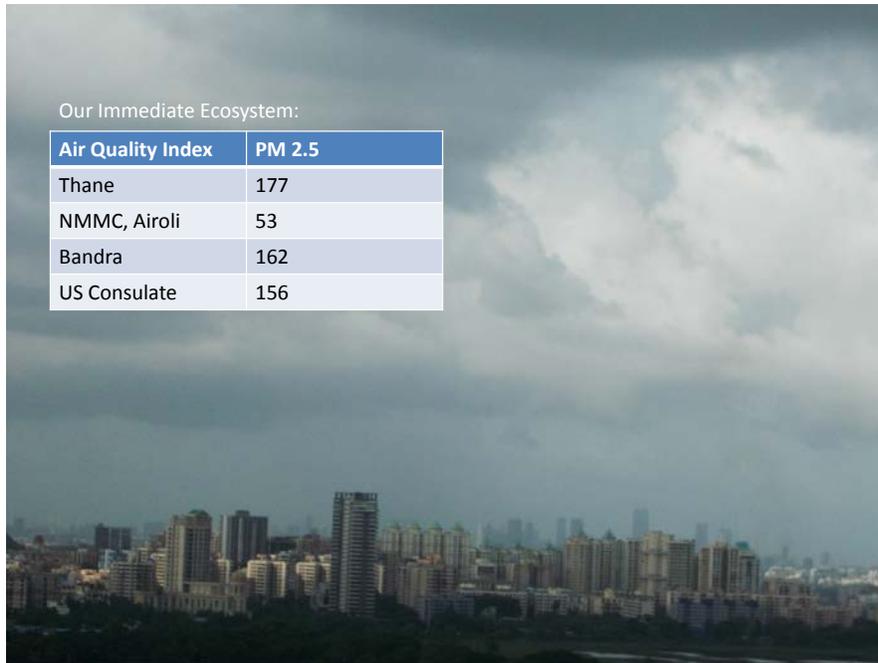
If one looks at the attributes it appears that some of the desirable qualities of the pre-industrial era are sought to be re-affirmed during the post-industrial era. Typically, it is the more affluent countries that may be described as post-industrial. These countries today are far more respectful of their environments than we are in India. Their rivers are clean and their cities are far more live-able. In spite of having a much larger population, we have chosen to emulate the kind of development that took place in the West. If we had focused instead on building our nation through building the villages as Gandhi had suggested, it is possible that we might not have had people migrating to cities in such large numbers. We could have embraced modernity but interpreted it for our needs. If you look at the third column, it suggests that the valuable attributes that are sought to be reaffirmed in the post-industrial age can perhaps be done only by those who are privileged. Thus, the privileged can choose to walk; the privileged can choose to practice pottery.

Industrialization is trying to ensure that we have more cups and saucers and pots than we need; more cloth produced cheaply and efficiently by power-looms. There is no issue here really. We can have our basic needs addressed by efficient industrial production; but this does not happen because we have yet to learn how to distribute and share such production so that everybody's basic needs are satisfied. Post-industrial societies are those whose basic needs have been taken care of. In such societies, it is important to understand how people occupy themselves meaningfully. If this is not understood there shall be a rise in mental illnesses and what has come to be called as life-style diseases.

The experiment of offering the pottery course to students is to introduce them to the possibility of an active kind of meditation that is easier for younger people to practice. Similarly the act of weaving, also invites a quiet reflection and can be a therapeutic activity. It is not with these intents that the courses were started, but it does appear that this is what such hand-crafted efforts have to offer to contemporary societies. While we continue with industrial production, it is important to keep some of the joys of the hand-crafted for human beings. These creations are often exchanged or bartered and create a new kind of contemporary culture that celebrates all that is hand-crafted with care. In a faceless, feeling-less, scenario enabled by artificial intelligence, it is such a culture that reaffirms the human touch.

The pressures of handling large numbers of students have also made our education like the factory assembly-line. It is possible that practicing the hand-crafted, slows us down and reduces the anxiety that creeps in un-noticed into our inter-personal relationships. My interactions with students in the pottery course are far more personal than in other courses where I am simply lecturing large numbers of students. The metaphor that maybe said to describe the pre-industrial life is the metaphor of the forest. The industrial life is best described through the metaphor of the factory. Post-industrial life seeks to combine these two metaphors. A metaphor for future societies may be the metaphor of empathy and of understanding what constitutes *ananda*. The notion of *ananda* comes to us from pre-industrial sages who observed that the purpose of life is to clear our consciousness so that we may experience the *ananda* of being alive. Someone jokingly said that the purpose of our lives today is to charge our devices; devices that enable the artificial intelligence and big-data empowerment that governs much of our lives.

These are not esoteric concerns. In recent years there have been some days when I have had difficulty breathing. This is possibly because of the increase in pollutants in the air of our cities. Scientific readings of air quality index in Mumbai, appears to bear this out.



*The Hand-crafted in the Age of Artificial Intelligence.
(Above) Mumbai Air Quality Indices. (Below) A Centre for Experiential Learning.*



The sgraffito technique on kulhars made by students in a basic course on pottery

The basic exercise by students is to learn how to centre clay and make a uniform thickness cylinder. Students typically take a full semester to learn this. But to go from here to making a very fine pot can take all of ten years. There is a rigour in this that matches the rigour required in any complex science experiment. To become a potter with a reasonable mastery with clay could take all of ten years. The intent is not to make potters, but to communicate this sense to students.



Students learning how to draft and dent a table-top loom in the basic course on weaving

Weaving has also got a similar learning curve. Setting up a handloom and weaving a small piece of cloth does provide students with a glimpse of how wasteful, mindless production can be.

I sometimes ask students to write about their experiences. Here are two excerpts from what students have written. The first one suggests the kind of notions that students (and people) carry. Many of these notions suggest how distorted is our understanding of expertise.

Excerpt from a writing exercise for students,
in the Studio Project “Introduction to Weaving 1”(Minor Course):

*“Another point one can raise is that for getting into IIT,
we have worked very hard in early stages of our lives while the weavers, people who are currently
weaving would not have put in much effort in their childhood.*

*They only learnt the weaving skill while IITians have expertise in different fields, making them highly
valued individuals.”*

The excerpt above has to do with expertise – and one may in passing remember that expertise is a quality that may describe not just scientists and technologists but also weavers. Interestingly, the excerpt given below has little to do with notions of expertise; it dwells instead on the experience of involvement and learning.

Excerpt from a conversation with a student registered
for the Studio Project “Basics of Pottery 1”

*“I am a PhD student working on UV resistant paints that use
nano-particles of zinc oxide for better protection.
While working in the pottery, I get a different kind of happiness.”*

Does not your work on Nano-technology and paints also offer you happiness?

*“Yes it does. That shall lead me to a good career.
But doing pottery is a different kind of happiness.”*

I wish to thank a good friend for pointing out that it is this quality of experiencing that makes these courses refreshingly different from the many others that students undertake. It would be a significant achievement if students / the campus community at IIT Bombay had a greater access to the “different kind of happiness” that is integrated into the engineering programme. It would be desirable to have a balance between courses that build expertise and those that enable rich experiences.

One may regard the ceramic studio at IDC as a Centre for Meditation; the weaving studio as a Centre for Reflection. These currently accommodate about 100 students. It would be desirable to scale this up moderately so that it could accommodate 500 (of the 10,000 students on campus). We could begin organically by integrating this into the Student Activity Centre. At some stage, when there is funding, there could be a new space for an Open Arts Programme, that imparts to learners that even the arts have a rigour that matches that of engineering.

This would certainly enhance IIT Bombay’s reputation as a place of excellence.