Prof Balram

Prof Singanapalli Balaram's story begins from Gunnathota Valasa, a tiny Agraharam (a village gifted to a scholar by the king) in Andhra Pradesh, South India. He lived in a joint family and as he was from a large household, he had a lot of free time. From his early childhood, the songs and storytelling events, put up during festivals and other events, captivated him. He was especially attracted to Tholu Bommalata the shadow puppet theatre tradition of the state of Andhra Pradesh. He was enamored by it so much, that he tried reproducing it with paper and put on shows for the children in the neighborhood. His uncle later sent him to school where there was no room for such pursuits in the arts. He finished his diploma in Mechanical engineering and was employed by JK Paper Mills. At that time he had no particular idea of design.

1. Hanuman and Ravana in Tholu Bommalata, the shadow puppet tradition of Andhra Pradesh, India

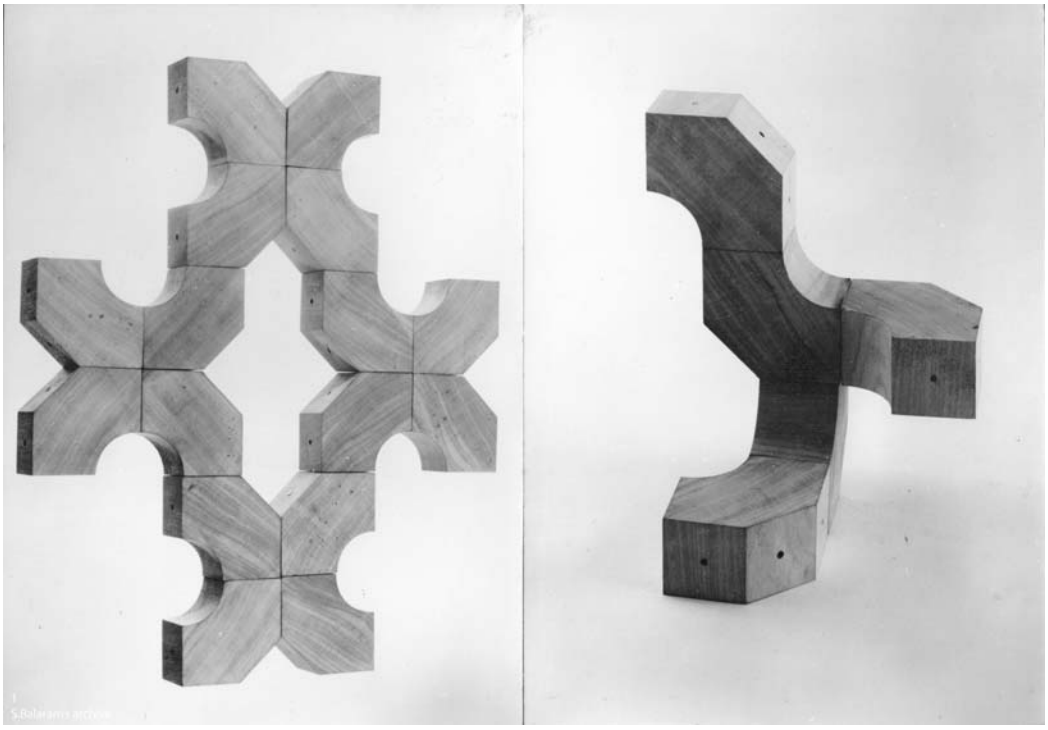
When his friend pointed out a particular advertisement in the newspaper from the NID, which called for engineers and architects with an inclination towards the arts. Without putting much thought, he applied for the sake of it and was surprised when he was selected. For somebody who had never even seen a camel or travelled far, this was an incredible opportunity.

2. NID, Paldi under construction

NID gave a lot of freedom for experimentation and a chance to be around people whose work was incredibly inspiring, people like Charles Eames, Bob Gill, George Nakashima.


3. S Balram working at NID

4. Prof S Balram, Charles Eames and Prof H Kumar Vyas



5. Combinatrics assignment at NID as a student

6. Bob Gill

7. George Nakashima

The first batch of NID had as teachers Prof H Kumar Vyas and Prof Sudhakar Nadkarni. And the batch itself consisted of engineers who were disgruntled with the field. People like AG Rao, Sudarshan Khanna, Chattopadhyay. Their batch had a lot of challenges thrown at them in the form of ambiguity and process based learning which proved tough for some, as the course was still being evolved.

He was given a second opportunity to go to Royal College of Art, London, where he got to work with under the guidance of people like Misha Black, Bruce Archer and the location in it self was enriching for a young-creative mind.

8. Sir Misha Black second from left

At RCA, Prof Balram for his project took the bicycle. This project was the least expected as he was equipped to design really high technology products like jets or cars. Balram states that he has always wanted to work for society and hence was always more inclined to design trains or cycles as it benefited more people. This cycle was addressing the need of a personal vehicle in India that had to be affordable, sturdy and comfortable. This prototype was brought back to India, which was replicated with the help of a small-scale industry.

9. Moulton MK3 as inspiration


10. Sind cycle designed for India in RCA, Prof S Balram

11. Sind cycle designed for India in RCA

12. Graduation at the Royal College of Art, London, UK

On coming back he collaborated with students and teaching through collaborative or participatory learning methods. Along with Professor Bhandari, Prof Balram taught

environmental exposure (Rural Exposure or Living with People) where the faculty and students immerse themselves in the rural way of life. Here learning was through doing and observation without photo recording.

In the late 70's, there were lot of issues with sectors of agriculture, fuel and the economy. Some of the early project involved the design of the bullock-cart, harvesting implements.

13. Agricultural products

14. Seed drill

VS Naipaul had come to NID to look at some of the products and he mentions his visit rather caustically, in his book “India-The Wounded Civilization”, he criticized the usage harvesting blades in a foot worn implement and quipped in the end as he had seen another product; a wheelchair, saying that it was convenient that once the feet were injured the wheelchair would come in handy, he (Balram) said it is instrumental for the growth of designers that they learn to accept these critique and work forwards.

15. VS Naipaul

Multi Wick Stove:

At NID Prof Balram was selective in the kind of projects that he chose to do. Cooking was majorly carried out using the wick-type kerosene in India. Nearly 3.2 million tons of kerosene was being consumed annually for cooking, with a heat utilization efficiency of 42 percent. He made a gas stove with the Indian Oil Corporation and the Indian Institute of Petroleum, Dehra Dun.

16. Energy saving kerosene stove Indian Oil Corp

This stove gives 50% higher efficiency by controlling air intake for maximizing combustion. It was designed for production via small-scale industries. This multi-wick stove has a square fuel tank with increased capacity of 2.24 liters thus reducing number of fuel fillings, reducing the tedium of using the stove as well the wastage involved. It has features incorporated in it that prevents misalignment of sleeves, adjustable wick length and an oil level indicator. With adjustable vessel supports it could handle a wide range of vessels for purposes of boiling large volumes of water to melting small portions of butter. It is known now as the 'Nutan Wick Stove'.

He designed a gas stove for the Indian Oil Corporation as well. IOC had worked out a gas burner, which was 15% more thermally efficient than existing burners. Being a public sector company it had planned on offering the new gas stove and burner singly or independently to various deserving manufacturers for a nominal for batch production.

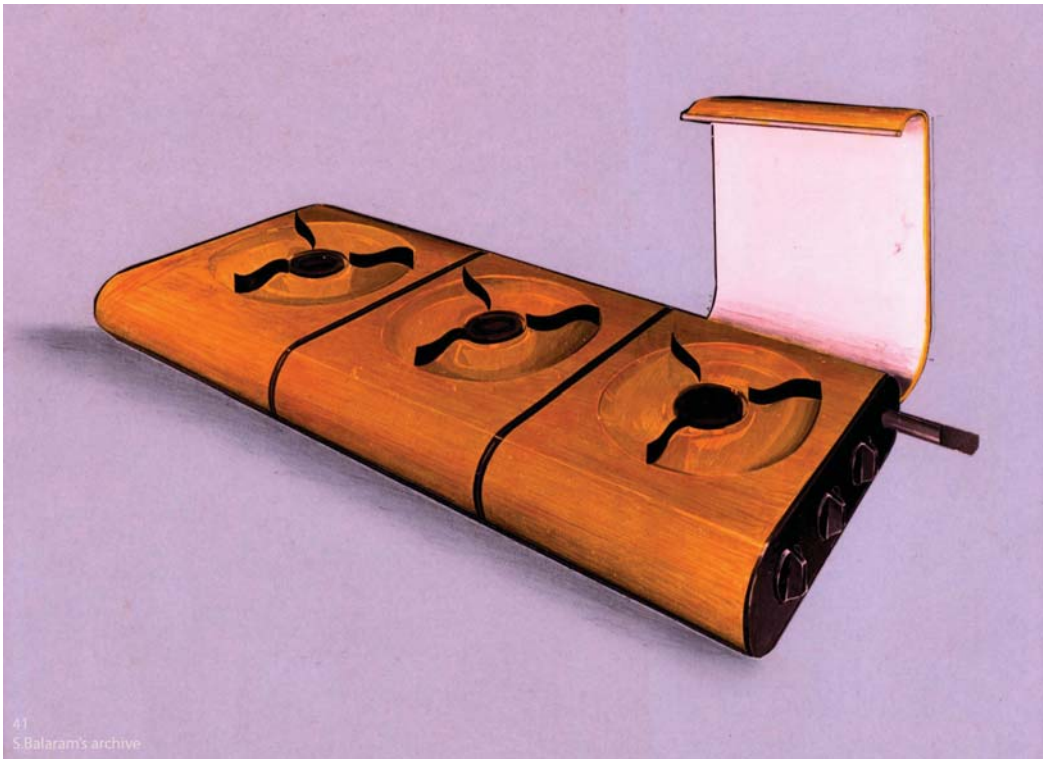
There was a certain monopoly, that the gas dealers who also sold the stoves, as LPG was inexpensive of the fuels and cleaner. However the stoves had remained more or less the same copycat versions that had been brought over from outside the country which were being sold at increased product price with no real value-addition. Prof Balram developed concepts based on his analysis using a minimalist design approach, thus maximizing benefits for the user at low materials and process consumption.

17. Single burner gas stove IOC

18. Double burner gas stove IOC

The project didn't exactly work out the way he wanted it as the design also involved modularity in the stoves to accommodate the expanding nature of an individual's household from bachelor to married and then household with children.

19. Modular gas stoves IOC



20. Modular gas stoves render

The clients however found that the concepts were to too revolutionary and feared that the Indian housewife might not relate to it at all. The next iteration had him tone down the design and materials. But this is something Prof Balram says that designers have to get used to, as it is very rare that a design you make is accepted and then realized to its entirety.

Prof Balram is for open source as he feels the chances of good designs and ideas being realized and propagated are more as compared to a patented and centralized system of designs. He quotes the example of Saint Thyagaraja's Krithis, if his heirs had prevented the spreading or dissemination of the Krithis, we would have been poorer for it.

Oxygenator-cardiotomy reservoir device:

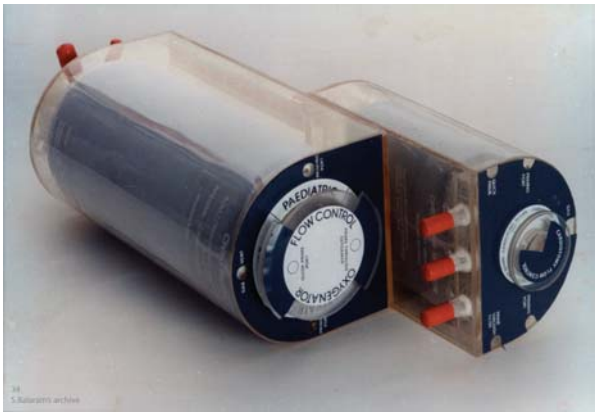
The blood oxygenator is a device used in open-heart surgery for storing and maintaining the level of oxygen in the patient's blood during an operation. During the time most of the oxygenators were being imported, raising the overall cost of the operation and the dependency on another country.

The Sri Chitra Thirunal Institute of Medical Sciences and Technology, Thiruvananthapuram commissioned Prof Balram to design and develop an indigenous oxygenator.

21. Imported oxygenator

The institute had done some preliminary work, but to gain momentum Prof Balram had hang around in the operation theatre though he was squeamish at the sight of blood. It was during a

crucial meeting that Prof Balram had a “stupid” doubt, that the oxygenator was separated from the cardiotomy reservoir device, was taken for granted, he enquired whether both devices were crucial to be used together during the operation, if it was then why weren’t they married together or integrated yet.



22. Blood oxygenator,Prof S Balram and Sri Chitra Tirunal Inst of Medical Sciences

23. Blood oxygenator, Prof S Balram and Sri Chitra Tirunal Inst of Medical Sciences

The lead surgeon felt that this was a valid proposition, which led to the first ever-integrated oxygenator-cardiotomy reservoir device, which has won the National Meritorious award.

He cites his influences and what they inspired, Varghese Kurien of Amul is a personification of straightforward and forthrightness in a human being, he is an example of what can be

achieved when the will is strong. Another inspiration is Laurie Baker, the architect and reformer. He revolutionized the architecture for the common man with the heightened usage of the Indian Aesthetic. There he also met Baker's friend Panikkar who was intrigued by the design school selection process for newer batches. He laughed at the fact that these schools take the best of the best of the students, which would mean that the faculty didn't really have much work if the students already knew things. Though he couldn't revise this when he was at NID after coming to DJ Academy he realized, the level of commitment rather than just high IQ or marks should be the gauge when it came to selecting students. And he says this out of personal experience, he says being open to change and objectively learning is at the core of being a designer.

24. DJ Academy, Coimbatore, India

Impact of Industrial Design in the Industry:

On being asked about the evolution of product design and design education he says there is erosion in the zeal of the students and professionals who practice design. There is a definite recognition from the industry of the un-employability of designers who pass out from D-Schools. He says, the industry wants more people and the D-schools produce more designers but there is no connect and this he says is true for engineering and many other streams of education. Gui Bonsiepe used to say that CAD is a tool but designers need to use it as a creative tool. He also talks about the dominance of Internet and feels that the kind of processed data

that is available has reduced the level of curiosity that initially used to be high. And the ability to use the Internet to share incredible amounts of data to accelerate design processes is only now being realized, though in pockets. He says there is a divorce between the intent and scope of technology and the actual usage and this is seen in the education system, specifically design education, there is not enough work in reforms in education and employment based on committed and vested interests.

Universal Design

Prof Balram feels there is a divorce between digital technology and its ability to connect. He says society would be richer with integrated systems when people look outside of themselves and include the people who are outliers, the environment.

25. Universal design workshop

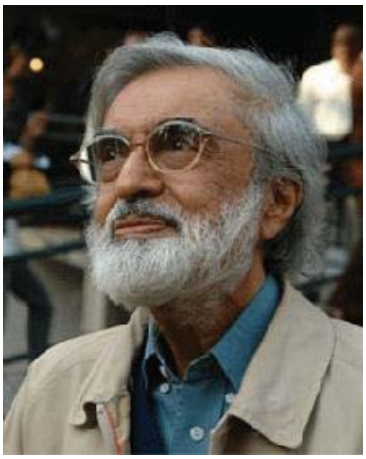
The fragmented or categorized world has created for Prof Balram a frightening and surrealistic world of products. He feels designers have become oblivious and inconsiderate towards the often wrongly titled **minorities** of the real world. It is understood in the terms used while talking about the future of mankind and the way we deal with death.

The editors of a reference book approached Prof Balram on Universal Design, as he was considered, to be a representative of the developing world. He questioned the usage of the

words-**Developing world** and then the **third world**. He also talks about the continued usage of bias loaded words. He moved for the usage of a different word that would better represent the actual scenario, to represent the nature of nations using population as basis (since the so called developing world had the higher population, statistically) he coined the word-The **majority world** which is now being used globally.

On the evolution of product design history:

He says one of the negative aspects of modern history for India is that we are either consciously or subconsciously overwhelmed by the writings from the west. But ironically it is also the west that has asked us to look back to our roots to find the solutions to many of our own problems. The aspect of 'Kala' which Prof H Kumar Vyas talks about is crucial in that aspect, it gives an idea of the un-fragmented nature of art, architecture, engineering and design.



26. Prof H Kumar vyas

He quotes the Vishnu Purana, about a king who was enthralled by a sculpture, he asked the Sage Markandeya how to learn sculpture. The sage advised, that to learn sculpture, one needs to understand space, through edicts in architecture. The architect tells him to understand space you need to understand movement, through dance, the dance teacher tells him to understand dance one needs to understand the principle of beats through music, to understand counting beats through mathematics and so on and so forth thus illustrating how everything is connected. So the understanding of connection of everything in life and acknowledging that it exists is something that seems to be understood and practiced lesser and lesser and thus we seem to hinder our own progress.

Image References:

1. Hanuman and Ravana in Tholu Bommalata, the shadow puppet tradition of Andhra Pradesh, India: Shadow Puppets of Andhra Pradesh. (2016). [online] Wikipedia. Available at: https://en.wikipedia.org/wiki/Shadow_Puppets_of_Andhra_Pradesh [Accessed 2 Apr. 2016].
2. NID, Paldi under construction: Courtesy of Prof Nadkarni
3. S Balram working at NID: Courtesy of Prof S Balram
4. Charles Eames, Prof H Kumar Vyas and Prof S Balram: Courtesy of Prof S Balram
5. Combinatrics assignment at NID as a student: Courtesy of Prof S Balram
6. Bob Gill: Trailer: Design as Idea with Bob Gill on Skillshare.com. (2016). [online] YouTube. Available at: https://www.youtube.com/watch?v=_-nuzlpiKag [Accessed 2 Apr. 2016].
7. George Nakashima: Furniture by George Nakashima | Knoll. (2016). [online] Knoll.com. Available at: http://www.knoll.com/shop/by-designer/george-nakashima [Accessed 2 Apr. 2016].
8. Sir Misha Black second from left: Courtesy of Prof Nadkarni
9. Moulton MK3 as inspiration: Courtesy of Prof S Balram
10. Sind cycle designed for India in RCA: Courtesy of Prof S Balram
11. Sind cycle designed for India in RCA: Courtesy of Prof S Balram
12. Graduation at the Royal College of Art, London, UK: Courtesy of Prof S Balram
13. Agricultural products: Courtesy of Prof S Balram
14. Seed drill: Courtesy of Prof S Balram
15. VS Naipaul: The Prize-Winning Literature of V.S. Naipaul. (2015). [online] Raptis Rare Books. Available at: http://www.raptisrarebooks.com/creating-a-collection/the-prize-winning-literature-of-v-s-naipaul/ [Accessed 2 Apr. 2016].
16. Energy saving kerosene stove Indian Oil Corp: Courtesy of Prof S Balram
17. Single burner gas stove IOC: Courtesy of Prof S Balram
18. Double burner gas stove IOC: Courtesy of Prof S Balram
19. Modular gas stoves IOC: Courtesy of Prof S Balram
20. Modular gas stoves render: Courtesy of Prof S Balram
21. Imported oxygenator: Courtesy of Prof S Balram
22. Blood oxygenator Sri Chitra Tirunal Inst of Medical Sciences: Courtesy of Prof S Balram
23. Blood oxygenator Sri Chitra Tirunal Inst of Medical Sciences: Courtesy of Prof S Balram
24. DJ Academy, Coimbatore, India: Who We Are | Design Graduate Schools | Design Academy | Design Institute in India -. (2016). [online] DJ Academy of Design. Available at: http://www.djad.in/about-us/who-we-are/ [Accessed 2 Apr. 2016].
25. Universal design workshop: Khare, R., Khare, R., Khare, R., Khare, R., Khare, R., Khare, R. and profile, V. (2010). Universal Design in India: April 2010. [online] Universaldesigninindia.blogspot.in. Available at: http://universaldesigninindia.blogspot.in/2010_04_01_archive.html [Accessed 2 Apr. 2016].
26. Prof H Kumar Vyas: Prof. Kumar Vyas | Misha Black Awards. (2016). [online] Mishablackawards.org.uk. Available at: http://www.mishablackawards.org.uk/medal/vyas [Accessed 2 Apr. 2016].