

'Arupa' the 'Implicate Order' as a New frame-work for 'Form and Design'-1

Enfolding, Unfolding process of Language, Perceiving 'practice of design' as an Order

a g rao

Abstract: the article proposes 'Arupa' the 'Implicate Order' as a New frame-work for 'Form and Design'. Looking at fundamental orders, it adopts 'Implicate Order'-proposed by Dr. David Bohm, a physicist, who had several dialogues on the topic with J Krishnamurti, a spiritual leader and philosopher, as 'Arupa'. Use of Language in its 'Enfolding, unfolding' process and its implication, in the context of a concrete product, 'chair' are examined. Notion of 'Meaning as Intention' for profession of Design and for an Individual designer are discussed in detail. Role of 'Inner Order' which manifests as I-factual and I-psychological are brought out. It ends with urging for 'Actions' based on I-factual (I-fac) to unfold into a 'Generative Design Vision', beneficial to Humanity as a whole by networking with other disciplines.

The word 'Arupa' comes from Sanskrit. It means un-manifested Form.

Arupa has been referred to a state of 'God', Paramathma' in Hindu religion. Similar references to the 'ultimate' are also made in other religions and by Greek philosophers as well.

The word 'Rupa', in Sanskrit and many Indian languages, is referred to 'manifested form' or 'shape'. Design also can be seen as manifestation of 'Arupa', the deep order of form.

Arupa the un-manifested, with its 'implicate order' can be a new frame work to unfold 'Form and Design' at multiple levels, in various contexts, including adjacent fields,

In this effort it is imperative to start with knowing 3 fundamental orders. It is also essential to understand 'Inner Order' in human beings as 'I- factor'.

1.0 Three fundamental orders and an essential order

1.1 Cosmic Order (CO)

1.2 Biological Life Order (BLO)

1.3 Human Thought Order (HTO)

1.4 Inner Order (as I factor)

Human Thought is our field of operation. Cosmic Order and BLO can be only discussed in HTO as that is our main means of communication with all its limitations.

1.1 Cosmic Order (CO)

CO can be perceived only through its manifestations which we can experience through our senses and the theories built in Human Thought Order (HTO). J Krishnamurti, a spiritual leader, philosopher asserts that one can participate or touch the 'Ground', another word referred to Cosmic Order in his discussions with David Bohm, well known physicist. Dr.Bohm, who was also close to Albert Einstein, coined the word 'Implicate order' (1). As a Quantum physicist he derived 'mathematically' the notion of Implicate Order, which can also be

seen as Cosmic Order. CO manifests as explicate order. Stars, planets, ever expanding universes, Galaxy, big bang, are all manifestations of such explicate order.

Dr. Bohm's articulations open up new possibilities of looking at 'Form and Design'.

Some fundamental notions emerge out of all such articulations.

1.1.1 Energy

1.1.2 Matter

1.1.3 Space

1.1.4 Time

1.1.5 Movement.

These notions in CO can also be discussed in the frame work of other two orders.

1.2. Biological- Life Order (BLO)

Religions have their own version of how 'life' has come into existence.

Science has been addressing BLO. Darwin's theory of Evolution is a land mark and sees human beings as part of the Biological-Life order. Two well-known books, 'Selfish Gene' by Richard Dawkins and 'Naked Ape' by Desmond Morris, further bring out this factor emphatically. Science has been unable to decode 'Life' so far! But we are able to perceive and experience Biological-life order, as a part of it. Scientific studies of BLO keep revealing its nature. Notion of 'Implicate Order' suggests BLO as manifestation of Cosmic Order.

'Language Acquisition Ability' (LAA) seems to be significant 'jump' in biological evolution of human beings as pointed out by 'thinkers' like Chomsky. We may say LAA has led to Human Thought Order (HTO).

1.3 Human Thought Order (HTO)

Understanding Nature of HTO is of great significance. Again Bohm's Implicate Order can provide us a tangible means in the exploration of HTO, with 'Language' as starting point. Notion which considers 'Human Languages as mere enhanced ability of communication' is challenged by both Noam Chomsky and David Bohm, who assert that language acquiring capacity is unique to human beings. Chomsky points out that 'Social Communication' is common to all species. We can also see how it is coupled with their survival strategies. For example, 'Studies on Ants' by Edward Osborne Wilson (2), have given insights into their highly developed social order, which has enabled them to survive without physical changes till today. They have a unique language of communication based on sense of smell and touch.

Human language with abstracted symbols no doubt is a 'superior trait' which has led to HTO.

Its fundamental content enables an 'inner order' in human beings. Such Inner order leads to the notion of 'I', an individual identity in human beings.

1.4 Inner Order and 'I' as a factor

We are familiar with 'I' as an individual. But 'Inner order' of 'I' is not obvious. It manifests in two sub-orders, Factual and Psychological. Both need to be understood to probe 'Arupa' or 'Implicate order'.

'I' at Factual level (I-fac)

To comprehend wholeness (CO, BLO) as knowledge in HTO, division into parts or slicing into segments becomes an essential strategy. Formation of I-fac, a manifestation based on factual knowledge as a 'centre', facilitates such knowledge building in all areas like Science, Art,

Architecture, Music, Design, Medicine, Law, etc. Breaking down into parts seems to be a strategy in Nature or BLO also, as we have discovered in genetic codes and fractal geometry.

But 'seeing' parts as whole is a constant challenge for I-fac.

'I' at Psychological level (I-psyc)

I-psyc is a manifestation of 'I' at psychological level as 'ego', with formation of an 'individual image'. It is perhaps rooted in its 'physical insecurity' carried over from its biological order. The root cause of formation of I-psyc, is not known. Spiritually, it is seen as an 'Illusion'. Identity with a name, religion, belief- system, class, Nation, etc., are all part of it. It also acts as a centre of engagement and is interwoven with I-fac in many ways. I-psyc is unable to see and overcome its inheritance of biological instincts like fear, aggression, etc. In addition, I psyc extends them into thought zone which manifest as irrational desires for 'power and fame', taking them beyond their biological instincts. Urge for 'unlimited acquisition' and 'permanence beyond physical death' are also traits rooted in I-psyc.

Domination of I-psyc results in 'I' functioning as a 'fragment', declining to be a 'part' in the collective consciousness, leading to current crisis of Humanity,

Fragment is like a piece of broken glass with irregular geometry, whereas part is like a cut out geometric shape which can fit into a larger fractal order.

However, 'I' is endowed with the capacity for having 'insights' to overcome the limitation of I-psyc. We shall examine I-fac and I-psyc, in the context of finding meaningful role for practice of design at individual and collective levels to shape the planet in right direction.

2.0 Enfolding and Unfolding traits of Implicate Order: language as means

Dr.David Bohm brought out the concepts of enfolding and unfolding in the context of 'Implicate Order' which he had established mathematically . He explains, taking an example from Science, *'Information out of which a television image is formed is enfolded in a radio wave which carries it as a signal. The function of the television set is to just to unfold this information and 'display' it on the screen. The word 'display' also means to unfold, but for the purpose of showing something, rather than for its own sake'*. (3) (page 11)

He further extends the notion: *'what I am saying here is that the movement of enfolding and unfolding is ultimately the primary reality, and the objects, entities, forms and so on, which appear in the movement are secondary'*. (4) (page12)

Our contention of 'Arupa' in the context of design fits into his assertion that *'movement of enfolding and unfolding as primary reality*. 'Arupa' the unmanifested form, also corresponds with Architect Louis Kohn's notion of 'Form' when he calls it 'dimensionless'.

However, 'rupa' the manifested shape is also referred as 'form' in some contexts.

To avoid confusion, we can consider two names

Uform : Un-manifested form for Arupa the implicate order.

Mform : Manifested form for 'rupa or shape'

Second part of Bohm's statement *'the objects, entities, forms and so on, which appear in the movement are secondary'*, coming from a quantum physicist, touches fundamental notions.

It also helps us to see ‘physical and digital’ products in one category.

He also connects implicate order with language by bringing ‘meaning’ into picture when he says, *‘Here I could add that language, which is essential to the communication of thought and to its precise determination, may also be seen as implicate order. After all, the word is only a sign or a symbol of very little significance in itself. What is more important is its meaning. Generally, this is determined only by a much larger over-all context. For example, the meaning of a given word may be affected by other sets of words, such as a sentence or a paragraph, is ultimately unfolded into the whole content that is Communicated. Such a notion is suggested even more strongly by the fact that often one can sense that the whole order of words seems to flow out of single momentary intention without the need for choice for their order, essentially as if they had unfolded from something that was already there in the intention’*(5) (page 16)

The above statement takes us to another level of exploration of Arupa by looking at ‘meanings at different depths in a language. ‘Ability to draw meanings as unique creative ability of human beings’, also has been emphasized by Noam Chomsky, while expressing his critical views on AI (6). (video ref.) Unfolding intention as ‘flow of implicate order’ mentioned above, has implication for ‘Design’ in its creative phase which can be examined further at a later stage.

With this as back ground, we can explore ‘Arupa’ as a framework for Form and Design’.

3.0. ‘Arupa’ of ‘chair’ as a concrete object or product

Chair is considered due to its everlasting presence and a previous study done which can be seen in the current context.

3.1 Language as a tool to look at arupa the implicate order with its unfolding-enfolding process in ‘Chair’

Efforts made earlier intuitively, to look at arupa of ‘chair, a concrete object’ using language as a tool (7) is re-examined in the frame work of unfolding, enfolding.

- **Unfolding process**

with adjectives:

based on **place** of use

Dining chair, Garden Chair, Lounge Chair, Beach Chair

Based on **person sitting** on it

Executive chair, Typist’s Chair

Based on **specific action**

Study Chair, Relaxing Chair, Easy Chair

Based on **person operating on a subject sitting** on the chair

Barber’s Chair, Dentist’s Chair

Based on **executing** the person

Electric Chair

Based on **Inventor/designer**

Eames Chair

Based on **Place of origin**

Barcelona Chair, Prague Chair, Sankheda Chair

Based on **Metaphoric link of its shape**

Tulip Pedestal chair, Merlyn Love Seat, Saddle Chair

- **Unfolding-enfolding process**

Chair has also acquired metaphoric extension beyond its physical shape
Chairman refers to person presiding over meeting, committee, company, etc.,
Chair in a University refers to an academic position.

- **Unfolding from different language roots**

‘Simhasana’ a word in Sanskrit and other Indian languages refers to Throne of a king. ‘Simha’ means Lion and ‘Asana’ means seat.

The word ‘Asana’ a place to sit opens up various ‘postures in Yoga’. In resting postures like Padmasana, Sukhasana, sitting does not need a chair. A mat on floor becomes the chair.

A similar word ‘Vahana’ refers to a vehicle or animal, on which one rides. Thus sitting on a bicycle or horse or elephant opens new boundaries to reveal the form of a chair for a designer. A new design named saddle chair is unfolding posture on horseback riding and combining with healthy posture or Asana. In fact, Indian Gods and goddesses have range of vahanas(vehicles) on which they ride. Lord Vinayaka’s ‘vahana’ is a mouse, for lord Kartikeya it is Peacock. Yama Dharmaraj , lord of death rides on a buffalo.

- **Unfolding –enfolding process**

In English language, ‘Seated in the chair’, ‘sitting on edge of chair’ have unique meanings. In a western tradition a person who assumes a ‘position’ would adhere to the rules of that position like a head of the department, because he/she is seated in the chair. In Indian tradition, person *sits on the chair* (‘ Kursi par Baitega’), with the assumption that he/she is entitled to change the rules of the position. Thus different unfoldings can take place in different cultures as the meaning changes.

In Chinese culture there is chair of Longevity. This chair has ‘letter forms’ as part of its shape which symbolizes the alchemical jar.

- **Unfolding –enfolding-unfolding process**

A play ‘The Chairs’ written by Eugene Ionesco is a poetic image brought to life – complex, ambiguous, multidimensional. The subject of play Ionesco wrote, “is not the message, not the failure of life, nor the moral disaster of two old people, but the chairs themselves; that is to say, the absence of people, the absence of emperor, the absence of God, the absence of Matter the unreality of the world, metaphysical emptiness. Theme of the play is nothingness...”

We could analyze the strategies adopted in the above enfolding unfolding traits to arrive at a local frame work to apply for a similar product or in similar situation by extracting rules like

- Finding the adjectives
- Looking at associated words in other languages
- Locating metaphoric extensions as nouns, verbs, etc.,
- Searching ‘Meaning in narratives, fiction in larger context’

But this still will not be adequate to look at rich enfoldings in 'Arupa', the implicate order of the product for its creation and existence.

Following statement of Dr.Bohm gives us further leads *to look at meanings and intentions..*

'A reasonable case can be made for the proposal that thought and language form an implicate order. But these also enfold feelings, vice versa, feelings enfold thought. Language, you see, is implicit in feelings, thoughts and words. The thought of danger unfolds into feeling of fear, which unfolds into words communicating feelings, and to further thoughts, and you see mutual enfoldment'.

Thoughts and feelings also enfold intentions. These are sharpened up into a determinate will and the urge to do something. Intention, will and urge unfold into more action, which will include more thought if necessary. So all the aspects of mind show themselves as enfolding each other and transforming to each other through enfoldment and unfoldment. And therefore we have a view in which the mind is not regarded as broken up dualistically or multiply into independently existent functions or elements like thought and feeling, because in enfoldment each aspect is internally related to the other than externally'. (8). (page17)

We could explore these integrated aspects at two levels

- **Feelings, thoughts of creators and users enfolded at one level.**
Design with its roots in Art has a tacit knowledge of its own. Studio Culture adopted from 'Architecture' has a manifestation in its Pedagogy. Foundation programme in Design Education with its exceptional character has implications for general education as well. New term like 'Designerly way of thinking' gives insight to its unique way of 'Practice'. The topic will be taken up for elaboration subsequently in another article.
and
- **Meanings and *intensions* of design and its practice with changing times, enfolded at another level.**
This will be our present focus.
Meaning and Intention
Is there a difference in Meaning and Intention?
Both words are used as synonyms with dictionary explanations
as in *sense*
'the idea that is conveyed or intended to be conveyed to the mind by language, symbol, or action.'
as in *purpose*
'something that one hopes or intends to accomplish'.
We can differentiate them as
 - *Meaning as our internal representation based on our perception of entities outside.*
 - *Intention as the meaning seen from inside 'with respect to self'.*
 and look at products we design and profession we practice.

3.2 Meaning of an 'Object' or a 'Product'

'Function' or 'what for it is' becomes a 'meaning' of the product or object.

Languages (verbal, visual, +) enfold 'intention' or 'function' of a product in many ways. It happens across cultures and over generations. The unfolding through language can uncover various 'rupas', and their relationship to human beings over a period as seen earlier.

Metaphoric extensions, Narratives give new meaning to the product and the culture around. In turn, Cultures become richer with new enfoldings. But meaning of products also enfold with its other values and social relationships creating rigid boundaries which can impede 'Innovation and Creativity' in Design. 'Tacit - Ontological classification', can become 'mental block' for 'change'! Here is where 'Arupa' as a frame work can help in discovering new position with a changed meaning of a product or its 'Interface'.

Tacit evolution of such a 'frame work' which gave new meaning to 'craft-design' can be seen in design of 'bamboo chairs' as M des projects.

3.2.1 Lounge chair in Bamboo: M-des project



Chair made in bamboo with integrated base. Ravi Koka on left side with Craftsman Patil in action.



Final design with metal base and stackable bamboo shell



N Rudra paul finishing the rim



Above chair seen from front

When Ravi Koka took the project to design a lounge chair in bamboo, it was inspired by a bucket chair, moulded in plastic, as a single piece. As a guide, I encouraged him and indicated it would be feasible and Bambu studio would support him by providing a right craftsman, who knows weaving of large baskets. He proceeded with the design. Somehow his interpretation got influenced by a 'tacit ontological category' for 'bamboo chair'. Notion of Bamboo chair, all in one material similar to 'plastic bucket chair', got fixed in his mind. No doubt, the idea prevailed in many people's mind around as well. He designed and made a chair innovatively using an integrated weave for the seat and the base.

- It was admired by others, as it was an innovation and 'first of its kind' made in bamboo.
- Meaning of bamboo craft as a skill of a basket weaver was appreciated.
- 'Enfolded meaning' or 'tacit intention' like 'poor craftsman needs to be benefitted by making a complete chair and selling it by himself' (a good act by a well to do designer) were operating.
- *Meaning of industrial design:*
to capture the beauty of craft and convenience of production as well as use, stackability and ease of transportation for selling the product in contemporary markets,
was completely missing.
- As a final project for Mdes, it was essential for a student to 'exhibit learning of industrial design.'
- *I was also putting efforts to create a new meaning for industrial design in bamboo craft. On my insistence Ravi Koka made scale models of his concepts, with simulated material like wire-mesh, for easier to verification of ergonomic viability with readily available scaled manikin.*

Changed meaning of bamboo chair.

With lot of discussions, Ravi Koka was in a process of getting convinced for a change in design from one-piece chair. This meant he has to make another prototype. At this juncture, an incident took place which changed the meaning of a 'Bamboo Lounge Chair', to him and to everybody around.

Dr. Rajendra Prasad who was Head of, 'Rural development activity' at IIT Delhi visited IDC. He was excited to see Ravi Koka's one-piece chair in bamboo and asked him to exhibit his chair in an upcoming exhibition at IIT Delhi. I was also invited to give a talk in a seminar during the exhibition. IDC deputed Ravi Koka to take and exhibit his chair at IIT Delhi. The concrete experience of taking the chair with him had a compelling impact on him. To start with, it did not fit into regular train compartment in which he had his seat. Somehow, with help of Mr. Nandu Sawant, a senior mechanic at IDC who had accompanied Ravi Koka to Dadar- Railway station, the chair was allowed to be put into an adjacent luggage compartment, as a special case. The transportation of chair became night mare to Ravi Koka. After the exhibition at IIT Delhi, I wisely, presented the chair to Dr. Rajendra Prasad to save the trouble of bringing it back to Mumbai.

The experience brought a new meaning to 'industrial design in bamboo craft'.

3.2.2 Dining chair in Bamboo- Mdes project

In a similar case of designing a dining chair by Prajakta, for a restaurant in bamboo, a new meaning was discovered. Bamboo was combined with Cast-iron frame. Prajakta's initial thinking of bamboo chair got modified when she did a brief survey. Modern restaurants in Mumbai were not keen on a bamboo chair with ethnic identity. They wanted a 'modern look' and convenience of stackability. Use of Cast iron frame which was made by a craftsman in that trade solved the problem. *Enfolding, unfolding and again enfolding, a complex process created a new meaning to contemporary bamboo craft.*



← Chair designed by Prajakta.B

Such enfolding-unfolding process to find a new meaning also led to seeing bamboo craft as 'Interface'. Craft persons were trained to use components from other materials bringing a change in the 'social order' of the bamboo craft community in India, which is elaborated in an article in my website. (9)

4.0 'Meaning as Intention' and its unfolding in design

Individual designers practice design as a profession. Over a period, profession enfolds into a community and acquires its own meaning in a context. Meaning of design for an Individual as well as group keeps enfolding and unfolding with varying, sometimes conflicting interests. To understand the intricacy, we need to examine them in their own context.

4.1 Meaning of industrial design as profession

Industrial design faces a crisis today in finding a 'meaning' for 'Practice of Design'.

Design as a profession has been evolving to find its own 'meaning'. Arupa as a new frame work can further shape such a meaning. 'Form and Design' can unfold in their new 'rupas' or 'Mforms' easily, once they are seen as 'orders' of their own with in the overall implicate order. Even as the 'meaning' keeps getting modified, its roots in the implicate order remain constant.

With this broad premise let us look at the current crisis of identity or meaning of Design Practice.

In the early stages, Practice of 'Industrial Design' emulated Architecture as initial designers were architects. Designers, like Henri Dreyfus and Raymond Lowey who were pioneering designers in US, worked as independent consultants, not as employers of any particular Industry. Henry Dreyfus gave a new identity for telephone, bringing 'human factors' into picture. Raymond Lowey brought new configurations to products like 'car' and 'refrigerator'. Europe had many prominent designers who worked as consultants. European designers like Mario Bellini, Dieter Rams, Ettore Sottsass, etc., were able to bring in their personal convictions into practice of design with Industries. Products were even identified with designer's name like 'Garret Rietveld Chair', 'Eames Chair', etc. An enfolded order 'for a star designer architect' had been bolstered by authors like 'Ayn Rand'. Prominent Architects like Frank Lloyd Wright, Le Corbusier, Mies van der Rohe, Louis Kahn, became symbols in such 'enfolding'. In this implicate order, 'becoming star designer' and practicing design became a meaning or motivation for young trainees of industrial design as well.

But the ideological grounds for Design got 'enfolding' in schools of design, Bauhaus and HfG, Ulm.

ICSID (International Societies of Industrial Design) was formed with initiative of leading French designer Jacques Vienot. British designer Misha Black, etc., had a strong role.

A definition of Industrial Design (ID), coined by Thomas Maldonado, Rector of Hfg, Ulm, was accepted by ICSID in 1969. This could be seen as a starting point for an unfolded identity of the profession. It states:

'Industrial design is a creative activity whose aim is to determine the formal qualities of objects produced by industry. These formal qualities are not only the external features but are principally those structural and functional relationships which convert a system into a coherent unity both from point of view of producer and user. Industrial design extends to embrace all aspects of human environment which are conditioned by industrial production'.

Initial designers trained in design schools worked with design offices in initial phases and aspired to work as independent consultants.

Soon, by eighties, with rapid pace of industrial growth the scene changed. Industries had teams of designers headed by senior designers. Slowly 'star-designer' concept vanished. Meaning of 'Design Practice' for an individual designer changed. He or she was a part of the team. Fewer independent design consultancy firms could be seen. I had a chance to visit Pentagram, Busse Design in Europe in 1992. Groups like 'Frog design' came to prominence. Product Innovations happened at different levels with different aims. Work of a designer in Industry started changing, bringing questions to his/her conceptual role. Such a crisis was *well brought out by Richardson A (1993) in his article 'Death of the Designer, where he says, 'The crisis of Identity is simply that designers do not do what they generally say they do. That is, they have much less*

control over the process of product development than one might be led to believe by the common rhetoric’.

In his conclusion Richardson points out

‘The correction of this deficiency will take time. Likewise, so will the recognition that designers should be present at the very conception of the product and re-evaluation by designers of their roles in the process of “form follows function”. While the implementation of these solutions to the current crisis of industrial design will be experimental, even problematic, such reassessments is imperative, for the industrial design is currently following leads only to its bastardizations.’ (10)

‘Arupa’ can offer a framework to look at industrial design profession and Pedagogy in new ways.

4.2 ‘Meaning as ‘Intention’ for Individual designer

‘Meaning as Intention’ manifests for Individual designer at 3 levels

- As an Individual functioning in a Society
- As a designer with values of the group
- As part of whole Humanity

4.2.1 Individual designer as normal person functioning in a Society

Today living in right way, peacefully is a challenge. Each person is subject to the conditioning of the culture and ecosystem around. Complexities of the evolving Societies pose several challenges. To understand the ‘Inner Order’ and its ‘enfolding as I’ becomes necessary to address the implicate order or ‘Arupa’.

Assuming that I-fac, unaffected by I-psyc is operating, what are the challenges for a young designer?

Design education/training is affected by ‘commercialization’ all over the world today. Students and Parents who support their education are thinking that it is the job of school to train and provide a secure job and career, for which they are paying hefty sum, or passing through great competitive hurdle! For example, in India, getting into a premier institute like IIT, is seen as a passport to future security! A young student is still not fully geared up to take up the responsibility of ‘Self Learning’. Design schools also face a challenge of providing a conducive eco system for faculty to pursue ‘excellence’. A video talk of Chomsky brings out some of the basic issues. (11)

Apart from this after graduation, a young designer has to face the ‘changing role’ of design in Industry. But often, he or she is not aware of the tacit abilities of a ‘designer’ which he or she has acquired, like

- To think ‘from concrete to abstract and abstract to concrete’.
- Solving an undefined problem
- Tacit skill of problem framing, in differing contexts.
- Withhold a ‘problem’ and ‘play’ with it before reaching a solution
- To reach a solution by ‘feel’, ‘somehow’ (jugaad innovation trait exercised in a design context) with faith and self-confidence as guiding factors.

- Exposure to tactical and strategic levels of problem solving in project mode.

With these abilities, well trained designers over the years, have been able to chalk out new roles, move to adjacent areas, especially in digital zone!

However, a major short coming in design education persists, that of knowing and dealing with I-psyc!

In the initial phases of design introduction in India, schools like NID and IDC with inspiration from Bauhaus and Hfg, Ulm, had a conducive atmosphere for long lasting relationship between students and faculty. It led its graduates to create new space for design practice in Industry. Some graduates who found the atmosphere restrictive were able to shift to other Industries or start their own consultancies, often backed by the design schools.

But functioning of a designer is enfolded with social reality which varied from person to person. 'I-fac and I-psyc' get interwoven for Individuals. Many IDC graduates accepted the roles assigned by Industry with peripheral design functions. Risk and Energy, required for 'change' has to come from the 'Individual designer'.

Many years back an idc graduate, left a reputed international company like Philips, Holland to pursue a risky private consultancy practice in Europe. Today, Satyendra Pakhale is an internationally known practicing designer.

Recently a young designer left a well-paid job in a digital Industry with a narrow profile of work in UX-research, for a less paid 'faculty position' in a new design school due to the better opportunity it offers to pursue design.

In nineties a team of 2 designers closed their consultancy office to take up full time industrial jobs in digital zone, as design with small and medium Industries was not economically viable.

Some of the early graduates from NID and IDC also have become Entrepreneurs with large turn overs.

These are few selected indicators referring to Indian situation. Systematic studies, locally and globally, can unfold as 'I-fac, I-psyc stories of designers' for the benefit of young and senior designers all over. Such research can help shaping meaningful careers 'as designers'.

4.2.2 Individual as a 'professional designer' with values of the group

Individual by training and practice becomes a professional. He or she needs to resolve the conflicts which arise in practice of a profession like 'Industrial Design' with its roots in Art and Architecture.

Some of the issues for a designer are

- Not trained to 'Act' as a part of Team, not just in a design group but groups including other professionals like hardware and software engineers, financiers, managers, etc.,
- Operating in the power structure of the Industry when immediate superiors do not have exposure to 'aesthetic functions'.
- Not trained to lead teams at strategic and conceptual levels as one often got into such a role by virtue of seniority in the Industry.

- Shortage of academic inputs to ‘upgrade conceptual directions’ like ‘future trends in other areas associated with design’, etc.,
- Dearth of design research in studies linking ‘practice to its ideals’.
- Societies of Design and ICSID not able to caste themselves into a new role of influencing Industry, Governments and Society at large, due to their enfolding in initial power structures.
- Lack of new ‘design discourse’ forums.
- Design field not able to attract ‘best talents’ as potential opportunities are not perceived.

One way to respond to these problems would be to think of ‘Remedial measures’, which has a danger of responding with immediate reactions based on past. Elaborate discussions or dialogues are required to develop ‘collective perceptions’.

Another way would be to see the problem as an ‘order’ connected to ‘arupa’ the implicate order. A parallel to ‘Inner order’ of an Individual, ‘a professional order’ in which individual plays an ‘innovative role’ can be thought of. Small groups overcoming the bindings of I-psyc can operate at I-fac level, with equal power and participation of junior and senior designers, without conventional hierarchies. New ‘friendships’ in digital mode can evolve across the countries to create such platforms. Hermann Hesse’s ‘Glass Bead Game’ can be an Inspiration for such new thoughts.

5.0 New role for ‘design and designer’ as part of whole Humanity

‘Meaning of design and being designer’ need a holistic perception. An individual designer is also a human being subject to the deeper orders, BLO and CO. But as Dr. Bohm says, ‘When man thinks of himself in (this) fragmentary way, he will inevitably tend to see himself first—his own person, his own group—he can’t seriously think of himself first as internally related to the whole of mankind and therefore to all other people.’ (12) (page24)

Our challenge is to see how a well-informed designer can become part of a new, design centered, self-generating, Vision

Fragment is like a piece of broken glass with irregular geometry, whereas part is like a cut out geometric shape, which can fit into a larger fractal order.

Reflections and Silence can bring insights in individuals to ‘see oneself as part and not as an independent fragment’. This is where a metaphoric mapping of oneself as a ‘part for a specific purpose’ helps. Logical recognition of ‘I-psyc’ as a reality at different levels, can give us an ability to negotiate with it in our self and in others. It will be possible to see ‘sub-orders and related orders’ for design to operate, apart from ideal modes like a spiritual pursuit to nullify I-psyc to zero level.

Crisis like global warming and its consequences have brought an urgency to look at the implicate order for such a predicament. Economic systems, capitalistic, social and mixed have been adopting ‘Growth with increased material consumption’ as their model for ‘Development’. Design has been a part of such growth culture which was pointed out by Vance Packard, way back in 1960, in his well-known books, ‘Waste Makers’ and ‘Hidden Persuaders’. It is also realized that we need 7 to 9 planets if American consumption model is adopted by all.

Industrial design has been operating in this 'reality' for long. Even Sustainable Development Goals proclaimed by UN have little effect, as relations between Countries are subject to I-psyc of their leaders who continue to indulge in 'Wars as Solutions'. Economic models offered so far, have been inadequate to address the root problem of consumption in an unequal world. A new model, 'Doughnut economics' proposed by Kate Raworth (13), is yet to be accepted at large.

Individual designers have been doing 'Innovative projects' to nourish design towards a new vision within the current economic and political order by extending role of design, and as break away 'set ups' beyond the accepted 'professional role'. But, we need to look at a larger frame work like 'Arupa the Implicate Order' to find design centered self-generating Vision.

Studying Pedagogy of design with its uniqueness in such a 'frame work' can help us in transforming other disciplines and general education as well. Beginnings made in that direction like, 'Designerly way of Knowing (Nigel Cross), Educating Reflective Practitioner (Donald Schon), Fifth Discipline (Peter Senge) need to be taken further.

Actions need to move into order-level from the level of 'specific projects and systems'.

Few pointers in the direction:

- A project for school children of low income families, 'Doors of Learning', done at IDC showed that an integrated approach was effective for improved performance of children. But two big gaps noticed at system level, were lack of intelligent audio visual materials, especially in local languages and shortage of teachers trained to use them. Audiovisualistics coined by prof. Bonsiepe would make a dent, if pursued for adaptation at 'interface' level with schooling.
- Short Films made by designers like Eames and McLaren have shown power of films for 'Learning'. But system level interventions are essential. Looking at 'film making' as an 'order' of design activity at strategic level can transform school learning fundamentally.
- A workshop called 'INNOMATH' conducted at IDC(see www.agrao.in) for Math teachers revealed that a new cadre, 'Teacher-designer' is needed for effective change in school education. Design can unfold in new ways in such an endeavor.
- Teacher-designers for schools, Doctor designers, Lawyer-designers can become new professions.
- It is possible to create 'Designers at different levels' to provide opportunities for disadvantaged groups in the current system. Some experiments in other fields like 'barefoot doctors' can manifest as 'barefoot designers', a word coined by prof.S.Balaram (director, SASI, school of design).
- JISTs(Jugaad Innovation Studios) mentioned in my website (www.agrao.in) can harness natural innovative abilities in traditional cultures.

More ideas can unfold with participation from other like-minded designers, other professionals, etc.

Let us look for a 'Design Vision' which needs articulation, dialogues and discussions in this quest for a new unfolding of implicate order or 'arupa'.

References

1. Bohm, D. *Wholeness and the Implicate Order*. London: Routledge and Kegan Paul, 1980.
2. Wilson, E.O.: Chemical communication among workers of the fire ant *Solenopsis saevissima* Fr. Smith). 1. The organization of mass-foraging 2. An information analysis of odour trail. 3. The experimental induction of social responses. *Animal Behaviour*, 10, 134-64 (1962)
3. Bohm, D. *Unfolding Meaning*. (London: Routledge and Kegan Paul, 1985),11
4. Ibid, 12
5. Ibid,16
6. video-Chomsky on AI see <https://www.youtube.com/@websummit>
7. Rao, A.G. Language as Tool – see <http://www.agrao.in/articles-papers-and-talks/145-language-as-a-tool-to-articulate-arupa-the-formless-in-design>
8. Bohm, D. *Unfolding Meaning*, 17
9. Rao, A.G. Review of Design of Disobedience-Bonsiepe see <http://www.agrao.in/articles-papers-and-talks/134-book-review-the-design-of-disobedience-bonsiepe-revised>
10. Richardson, A. (1993). The Death of the Designer. *Design Issues*, 9(2), 34–43.
11. Chomsky on education see [Education For Whom and For What? - YouTube](#)
12. Bohm, D. *Unfolding Meaning*, 24
13. Kate Raworth, Doughnut Economics see [Planetary Economics: New Tools for Local Transformation with Kate Raworth - YouTube](#)
