

INTERFACING VISUAL METAPHORS IN INDIAN HERITAGE: PURANAS

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ABSTRACT

To be more concrete about the importance of rich representation of Indian Heritage, digitization of ancient purana vidya is prerequisite. Indian heritage has reached to masses in India through 18 puranas, because of their certain outstanding features. The same could be represented very effectively appealing to masses via. Digitization process of it. Towards the digitization, puranas can be represented metaphorically with their structural peculiarities. The main purpose of this research paper is to bring to the floor the metaphorical analysis of this huge source under Indian Heritage(IH), by adopting the analogical model, that will be useful for contents tool designers as well as to the content creators by systematizing and fastening their work, and ultimately to the end users from the point of interfaces. With these issues, exploring an environmental atmosphere to make effective the process of digitization is the need for an integrated Indian Heritage Digital Library.

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0. Introduction

Metaphor has been a topic (1) of philosophical discussion since *Aristotle*. He ascribes the use of the metaphor to delight in learning; *Cicero* traces delight in metaphor to the enjoyment of the author's ingenuity in over passing the immediate, or in the vivid presentation of the principal subject. Aristotle used it (2) to include similes and other figures from classical rhetoric. In fact, it has almost certainly been more discussed by philosophers than all the other tropes together. Two themes are prominent in the discussion upto the nineteenth century:

1. Metaphors, along with all the other tropes, are decorations of speech.
2. Metaphors are, so far as their cognitive force is concerned, elliptical similes

What characterizes almost all theories of metaphor from time of the Romantics up through our own century is the rejection of both these traditional themes. Metaphors-so it has been argued are not cognitively dispensable decorations. They contribute to the cognitive meaning of our discourse and they are indispensable, not only to religious discourse, but to ordinary, and even scientific discourse.

In 1994, *John Lowler* (3) in his speech delivered to staff of IT division of the University of Michigan, explained the concept metaphor as a human cognitive phenomenon, though the word 'metaphor' has to be distinguished out of several different meanings of the word. This phenomenon is real, but it is very abstract and can't really be investigated itself. To find out how it works, one has to look at more concrete phenomenon. For example "Time is Money". In this sentence metaphor theme here, 'time' and 'money' are totally different concepts. A word 'spend' which is defined with respect to one kind of thing (money) is used in context with a completely different kind of thing (time). This he called as 'instantiation' of frame metaphor. Using a metaphor theme means that we can use words that are defined with respect to one frame in talking about concepts and words defined with respect to another. Thus, there are three levels :

1. Metaphor as a human cognitive phenomenon
2. Individual metaphor theme (Time is Money), and
3. Instantiation of metaphor themes (He spent an hour on that).

(16) Any view which holds that a metaphorical expression is used in place of some equivalent literal expression, Black calls it a substitution view of metaphor. To take a few examples *Whateley* (17) defines a metaphor as a word substituted for another on account of the resemblance or analogy between their significations. According to a substitution view, the focus of a metaphor, the word or expression having a distinctively metaphorical views within a literal frame, is used to communicate meaning that might have been expressed literally.

What then, is the character transforming function involved in metaphor? Answer may be either analogy or similarity. If a metaphor consist in the presentation of the underlying analogy or similarity it is called a 'comparison view' of the metaphor. *Schopenhauer* called it a geometrical proof like a mousetrap. *Whately* further elaborates the metaphorical view by saying that, "The simile or comparison may be considered as differing in form only from a Metaphor; the resemblance being in that case stated, which in the metaphor is implied." The third view as stated by Black, is that it avoids defects and limitation of substitution and comparison views of metaphor. i.e. 'interaction view'. This view gives important insight in the uses and limitations of metaphor. This view is committed to the following seven claims:

1. A metaphorical statement has two distinct subjects – a principal subject and a subsidiary one
2. These subjects are often best regarded as "systems of things" rather than "things".
3. The metaphor works by applying to the principal subject a system of associated implications; characteristics of the subsidiary subject.
4. These implications usually consist of "Commonplaces" about the subsidiary subject but may in suitable cases, consist of deviant implications established ad hoc by the writer.
5. The metaphor selects, emphasizes, suppresses, and organizes features of the principal subject by implying statements about it that normally apply to the subsidiary subjects.

6. This involves shifts in meaning of words belonging to the same family or system as the metaphorical expression: and some of these shift though not all metaphorical transfers.
7. There is, in general, no simple “ground” for the necessary shifts of the meaning- no blanket reason why some metaphors work and others fail.

1. Metaphor and Computer Science

In view of the concept of metaphor, computer science is not only chronologically new but radically new in kinds. Its mental process, its language, and the realities with which it deals are different from those of other sciences. (4) *Juris Hartmanis*, a mathematician turned computer scientist, observed some years ago that computer science is a “brand new species of science,” with paradigms radically different from those of other disciplines (5). *Edsger Dijkstra* made a similar claim for the radical newness of the discipline in his 1972 turning award lecture “On the Cruelty of Really Teaching Computer Science” (6).

We rightfully expect a radically new discipline to use language in new and distinctive ways. Computer discourse is a different area for such differences and features. However, without going into that, or mentioning either linguistic approach or philosophical (cognitive) approach, we must focus on the user interaction of the visual metaphor in computer science.

In the age of information today, computers are playing major roles because of their resemblance with human brain and connectivity. Human-computer interactions of ‘single user PC’ has changed with time and in distributed networks (or multi-user) environment of more sophisticated PCs, ways of rendering and presenting information has been changed substantially with inherent multimedia elements, that has profound impact over user interactivity. In view of this, it has become necessary to study the nature of interactions between computer and user-human in the light of visual presentations from the metaphorical aspects of it.

In (7) our increasingly information dependent society, visualization research has changed the way we present interaction, and understand large and complex data sets and information. Rapid developments in entertainment technology like digital cameras, Video recorder, TV , computer hardware, and the exploitation of multimedia technology have opened up completely new possibilities for people to gather, interpret, extract and manipulate information using visual media.

A fundamental problem associated with the new classes of visual data and their related analysis is that they focus, despite their appearance, on abstract information, which does not automatically map onto the physical word. Thus, many interesting classes of visual information have no natural and obvious metaphorical representation.

2. Digital Libraries and Visual Interface

Digital Library is an organized collection of multimedia and multilingual data, with information management methods, that represents the data as information and knowledge. **(8)** Thus, from the above definition, it is clear that data available in various formats and different languages can be collected, captured, stored, organized, manipulated and made accessible; in whatever media it consists of, but that is in digital form. The concept of a “digital library” is not merely equivalent to a digitized collection with information management tools. It is rather an environment to bring together collections, services, and people in support of the full life cycle of creation, dissemination, use, and preservation of data, information and knowledge.

With the development and spread of information technology, **(9, 10)** several projects were initiated in USA and Europe to build large-scale digital libraries, especially for the preservation of national heritage. One of the intensely pursued subjects of digital library is ‘heritage’ in the form of digital repository of rare texts, manuscripts, images, paintings, and artifacts. The Vatican Library Project is an outstanding example of a multinational and multidisciplinary project for building a digital repository of over 150,000 manuscripts, including the oldest known manuscripts of the Bible from 350 AD, and 1.5 million books including 8000 published during the first 50 years of the printing press.

2.1 Hypermedia Systems

Hypermedia systems are a special case amongst complex information systems, on digital libraries, that they are supposedly usable also by the “naïve” and casual users. To ensure this usability, applying user interface metaphors can solve the problematic of “getting lost in the cyberspace”. **(11, 12)**

Metaphors are needed for hypermedia in order to : **(13)**

- offer familiar and motivating presentation of the system
- impose further structure on node-and link networks
- visualize interaction affordances

Three basic metaphors type were discussed in International Hypermedia Conference’93 **(14)**

1. *Organizational metaphors* – *the metaphor manifests inherent structure that can organize node-and-link information within these metaphor-based spaces.*
2. *Functional metaphors* – *the metaphor is represented through visually recognizable objects that allow direct manipulations*
3. *Navigational metaphors* – *the metaphor allows (inter) actions by users that lets them move around in the hyperspace.*

Metaphor designers need to consider certain metaphor attributes i.e. characteristics **(15):**

- ? Real-word metaphors (e.g. library) Vs. non-real-world metaphors (e.g. UFO)
- ? Concrete metaphors (Tree) Vs. abstract /conceptual metaphors (e.g. family)

- ? Spatial metaphors (a house) Vs. Time-based (theatre)
- ? General metaphors (books) Vs. application dependent (train-time table)
- ? Flexible and composite metaphors (desktop with folder structures) Vs. rigid metaphors (room with four walls)

Thus, there is necessity to know the types of metaphors to fulfill the hypermedia metaphor requirements, characteristics of metaphors and decision on how the metaphors are presented in the user interface.

2.2 Indian Heritage – Digitisation Efforts

In India, the only known major attempt in preservation of Indian heritage, based on contemporary technology, is that of Indira Gandhi National Centre for Arts (IGNCA), which has undertaken a major project of microfilm/microfiche creation of rare manuscripts on Indian heritage, available in different libraries of India, through a UNDP Project. This mammoth work was undertaken by IGNCA, which has resulted in microfilm/fiche archival and also a classified collection of rare manuscripts in different libraries. However, the digital library is very different from the traditional libraries or analogue image based collections. There are no well-organized, systematic and well-planned efforts to build a digital library in India. Some individual or isolated efforts have been made but are lacking in wholeness in their approach or have lack of authenticity because they present just entertaining contents. There is no interaction and integration in such efforts so far, from the point of Indian heritage as a whole, that is widespread in multiple subjects, and also in multilingual forms as well as in numerous physical forms, geographically located all over India and well-classified too from ancient Indian approach.

2.3 Visual Metaphor Interface in Indian Heritage

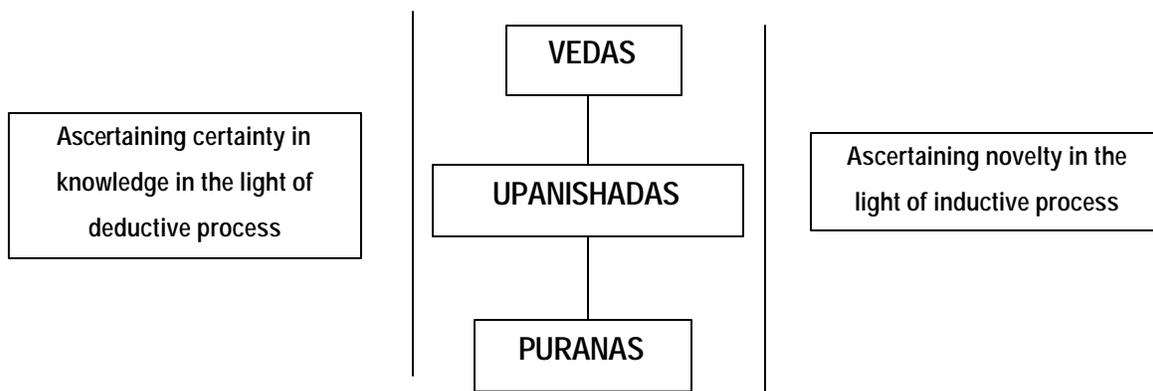
Indian heritage is unique in many respects; it is comprehensive and rich, flexible and accommodative. There is unity in diversity. Indeed, all credit goes to great *Vyasa* for his mammoth work! First of all Vedas were neatly classified and categorized as per their respective orders and merits by *Vyasa*. However, their culmination is found in the *upnishadas*. These ten *upnishadas* are further elaborated and reflected in the *puranas*. All in all, this pure deductive thought, one may claim, is found here. A single theme is running through and through right from Vedas down to *puranas*. i.e. *Vidnyan* or *Brhmavidya* in that context. This is what the classical thought has reaped after such a prolonged period, where there is certainty of knowledge which could be again and again tested and reaffirmed and referred back to Vedas. This is the greatness of *Vyasa*.

In the modern context of the digitization of library, a metaphorical tool has been devised and developed in the light of *puranas*. Here, the above source, mentioned in the previous paragraph, is used in the reverse order to explore to what extent the metaphorical device has certainty. There are three principal objectives in this: i) to seek certainty; ii) to find novelty or creativity; and iii) to see whether it scores simplicity.

Now while designing the metaphors as a digital tool the movement of thought is as under:
:

1. *Puranas* are dealt with, in the light of metaphors found in the *puranas* and digitization process is initiated.
2. The task is then to affirm certainty. Sources from *puranas* are tapped, which are actually found in the *upanishadas*, because it is through metaphors that these highest thoughts are exhibited and expanded in the form of stories, legends, myths and through anecdotes.
3. *Upanishadas* are crea of *Vedas* so via *upanishadas* one may go back to *Vedas* for the certainty or authenticity. This entire argument could be demonstrated in the following graphical mode.

Figure 1.



In brief, logical form without content is empty. Content without form is blind. Therefore, both are complementary aspects of the same reality. i.e. digitization of Indian heritage. Put in other words, for any effort of digitizing content under heritage source like *puranas*, it is very important to know that the logical form mentioned above comprises two approaches. The sole purpose is the mapping of author *Vyasa*'s mind referred as '*vyasamati*'.

Thus, it is necessary to know the types of metaphors to fulfill the hypermedia metaphor requirements, characteristics of metaphor and decision on how the metaphor is presented in the user interface in case of *puranas*.

3. Analogy: *Puranas* and Visual Metaphors

Before speaking about analogy it is necessary to understand the concept of *puranas*, their origin and internal structure. At the same time, it is also essential to see the resemblance and deviations among and between the internal structures of *puranas*. While studying from the view point of analogy, it is advisable to observe the distinguishing features of *puranas*, which we feel, lie in the fact that they allow to use and extend their metaphorical scope into the realms of other areas of inquiries, such as in this context. (i.e. visual metaphors).

3.1 Puranas

Under Indian heritage, *puranas* have a special importance and value. (18) In the history of Indian literature, it is one of the important literary works. Since ancient days, any auspicious ceremony starts with the intent of getting fruits out of it, as mentioned in *puranas*. Spiritual recitation '*Sruti smrutipuranotha phalpraptyarthm*' is an essential part of it. However, credit of social reflection and spread of an Indian heritage in masses, goes to *puranas* on large scale. *Puranas* have played pioneering role of motivation and practice for moral and legal grounds in the life of Indian society beyond the limitation of *varna*, caste and creed. It has established and deep-rooted the methodologies in the area of spiritual devotion. Literary beauty of *puranas* has attracted masses for understanding all the difficult philosophy in a lucid, entertaining and simple way. *Vayu-puran* mentions that no scholar is really a scholar; without the study of *purana-vidya* even though he might have studied *veda* and *upanishadas*. However many scholars have reservations about this approach because of the nature and structure of *purans*, because of real and unreal contents in it.

Puranas are defined as "*pura navam bhavati*" i.e. old and ancient still new in its manifestation. There are so many ancient sources, where, *puranas* have been referred. Especially, *Rigveda*, *Gopath* and *Shatpath Brahmanas*, *Ramayana* and *Mahabharata*. '*puranam sarvasastranam prathamam brahmana smrutam*' (*Matsyapurana* 53.3) i.e. First, God *Brahmadeo* created *puranas*. *Maharshi Vyas* compiled it in the form of *samhita* i.e. compendium with (*Vishnupuran* 3.6.15) the classified approach of *akhyane* (large stories), *upakhyane* (substories), *gatha* (poetic composition called *sloka*), and *kalpasuddhi* (6 types of purities as per *sastras* – *shroutsutra*, *grihyasutra*, *dharmasutra*, *sadachar*, *sanskar*). *Maharshi Vyasa* taught *Puranas-samhita*, to his disciple *Romharshan*. (*Vishnupuran* 3.6.17-19 and *Agnipurana* 271.11-12). *Romharshan* taught to his 6 followers. Among 6 disciples *Shasampayan*, *Akrutvarni* and *Savarni* created new *samhitas*. *Ugrasrava*, the son of *Romharshan* learned 7 types of *puranas* from *Maharshi Vyasa* and 4 from his father apart from 6 types those he learned from disciples of *Romharshan*. Thus, single *purana-samhita* became into 18 types. These 18 *Mahapuranas* with the *slokn* numbers are :

Brahma (10,000), *Padma*(55,000), *Vishnu*(23,000), *Shiv*(24000), *Bhagavat*(18000), *Naradiya*(25000), *Markandeya*(9000), *Agni*(15400), *Bhavishya*(14500), *Brahmavaivarta*(18000), *Ling*(11000), *Varah*(24000), *Skanda*(81100), *Vaman*(10000), *Kurma*(17000), *Matsya*(14000), *Garud*(19000) and *Brahmand*(12000).

3.1.1 Characteristics of Puranas

Puranas have described about different worlds (*shristi*), Catastrophies (*Pralaya*), Tradition of Kings (*Rajvansh*), Time measuring units(*Manvantare*), Kings(*Raje*), Rishis(*Maharshi*). *Bhagvat puran* mentions about 10 such characteristics : *sarga*-worlds, *visarga*-life, *vriddhi*-survival of life, *raksha*-manifestation of god i.e. *avatar*, *antare*-time measurements, *vansya*-traditions or *gharane*, *vansanucharit*-biographies and descriptions, *sanstha*-different systems origin and end, *hetu*-life description, *apasraya*-all three stages of *jiva* and omnipresent atman, basic cause of the world.

Puranas describe geography and astronomy, defense science, trade and communication, religion growth, politics, etc. They called *dwipa* to present continents. They were 7 in numbers. Apart from this there is a focus on sciences like; animal husbandary, *ayurveda*, *ratnapariksya*, *vastuvidya*, *samudric vidya*, *dhanurvedya* etc. They have described 14 *vidya* which are at metalevel.

The soul purpose of *puranas* is to create awareness in common people. Hence, *rasa*, *bhava*, meaningfulness, entertaining and attractive use of words and sentences from practice, poetic and lyrical composition etc. are the peculiarities of *puranas* literary composition.

3.2 Hyperstructure of Puranas

Description in *puranas* starts with some conversation. It goes on with stories and substories, illustrations, references etc. It is in the form of questions and answers(dialogical), advice, entertainment, moral principles, spiritual references, mystical issues like *shap* and *uhshap* (curse and solution to get free from it), reincarnations etc. Adventures, social references etc. are commonly found. Thus, the flow can be captured properly in the form of hyper structure. This enables hyper linking. However it is essential to understand the scope, common components, events, characteristics, ways of conversions, type of descriptions, common concepts, characters and many such factors for analogical analysis under hypermedia. This structure has ample scope for visual expressions in the form of picture, audio, video, and animation, in support of the basic text of it.

3.3 Understanding of the hyperstructure is very important in any content creation of the sources like puranas. While digitizing such sources, there are different roles for the digitizing team.

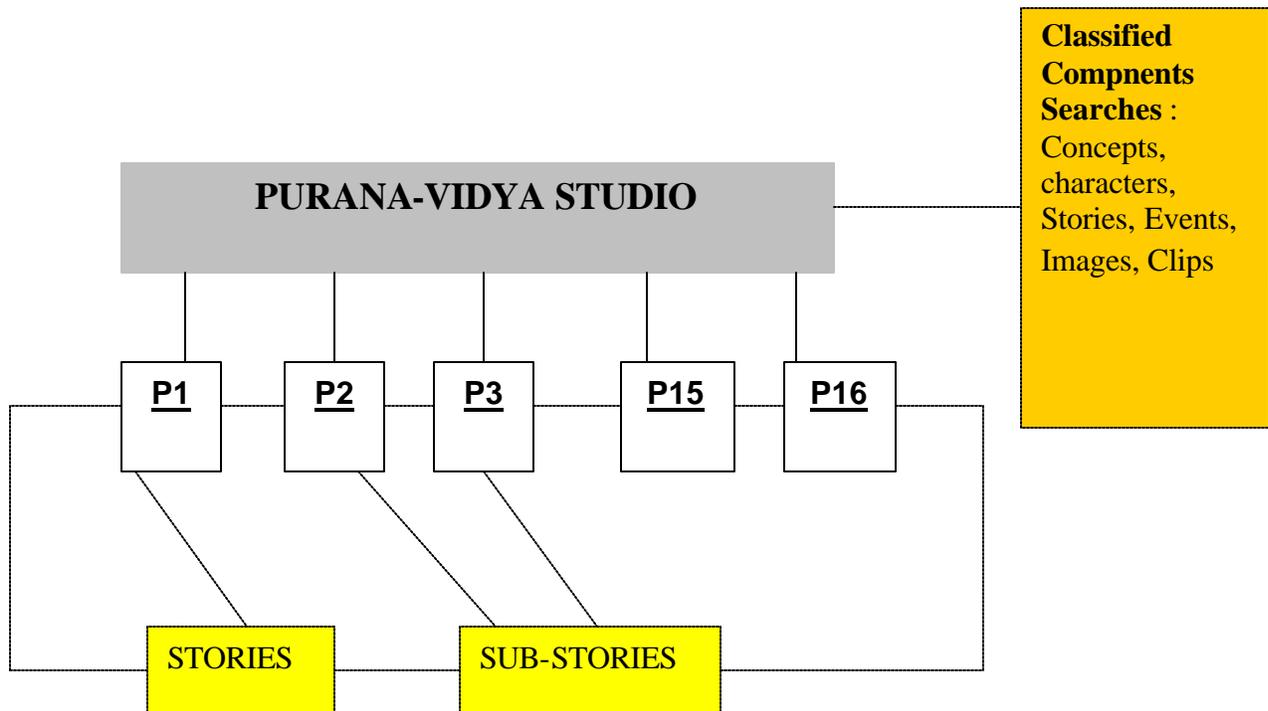
- ? Reference and bibliography collection
- ? Text / image/graphics/audio/video creation
- ? Animation and design elements preparation
- ? Overall designing of tools and template and language technology
- ? Interface and presentation
- ? Authentic expertise
- ? Storage technology
- ? Network expertise

Thus, all these roles fulfill the digitization of such source. Different spin-offs are possible during the process of digital content creation. A capable and planner leader takes care of this. If there is no proper plan, it may create complexity, redundancy and delay in production process of the project. Before initiating such project work, source understanding with its scope, its structure, and flow should be analysed and visualized properly. This helps in creation of tools and templates for such efforts.

3.4 Interfacing Visual Metaphors

As explained earlier, in the type of metaphors, we can relate those types with purans now.

1. Organizational Metaphors



(Figure 2.0)

Thus, homogeneous organizational structure of *puranas* can be observed here, which consists of different libraries like; images, animated clips, audio, routines, with the studio utilities, tool for the selection of search keywords, multilingual browsers / editors in built etc.

2. Functional metaphors

Once we have observed and studied organizational metaphors, the next step is to find metaphors represented through visually recognized objects: Standard icons throughout the source for stories, characters, events, mystical matters, spiritual concepts, conversations, moral advices, reciting mantras, different environments commonly

observed throughout the source e.g. heaven, gods/goddesses and many such imagery for frequently required things. This will enable to develop a content creator's studio tool mentioned earlier. This will help in fastening the process of pictorial and animated or audio elements and will reduce the redundancy as well as storage space and time for content creation.

3. Navigational Metaphors

As an outcome of above two processes, the tool should take care of indexing many such key factors, navigation and further use in search engine for user interface. For example: Classified Search (for text, images, clips), Editing symbols; Various icons for events, stories, sub-stories, keyword search, references, and many other user interfaces. One can add many such navigational facilities with respect to the visual presentation of the contents and related features on the desktop, in anticipation for content creators, designers, viewers or users for various interfaces. An integrated intelligent search tool can be devised here.

4. Conclusion

Preparation of tools and templates for digitization of *puranas* under Indian Heritage Digital Library will be done systematically with the specified approach here, with maximum originality of the content. This will be done with following expected benefits.

- ? Easy, Flexible and speedy content creation
- ? Standardization in content creation, design and visual presentation styles, searches, patterns, data, colour and for many other visual metaphors.
- ? Addition of authenticity in presentation of information
- ? Integrated and homogeneous structural design
- ? Ease in user interfaces
- ? Avoiding redundancy
- ? Distributed work culture is possible once template is ready- may it be remote or on network environment
- ? Minimise the storage memory size
- ? More portability of information and platform can be achieved
- ? Automatic indices preparation
- ? Check on duplication will be possible
- ? Systematic hyper linking will provide logical navigation to users
- ? Numerous spin-offs are expected out of this reflective process.

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