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Indigenous culture as a knowledge system

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Complex concepts such as cultural identity, gender issues and the effects of colonialism, politics, and power structures on societies form part of the debate around indigenous culture as a knowledge system. This article makes a contribution to the debate by addressing cultural issues encountered during a cross-cultural research project based in India and South Africa. The authors reflected on some of the conceptual issues they grappled with during their research. The project involved the documentation, study and understanding of the extent in which indigenous knowledge systems (IKS) and modern technologies were utilised in the traditional manufacturing processes of artisans in general and potters in particular. The roles and functions of IKS as used during the production of artefacts were included in the study. This perspective was coupled with a study on the artisans' attitude towards and understanding of science (PAUS) while conducting their traditional technological processes. The combined approach provided a method that allowed researchers to develop interventions that capitalised on existing skills, practices and social relationships rather than undermining them, thus contributing to their sustainability. The project, at the same time, focussed on redefining the characteristics of "knowing" (of knowledge) as not just a mere contemplative gaze, but also as a practical activity. By focusing on artisans, the question of knowledge was placed in the two spheres of knowledge production: "theory" (epistemology) and "practice". This approach attempted to address and discuss some academic notions based on culture; including a variety of aspects that broadly constitute the "concept" of culture. As these notions continuously alter with changing academic insights they are constantly re-defined by academics and researchers. **Key words:** Indigenous culture, indigenous knowledge system (IKS), cultural identity, design – traditional.

Introduction

The term "culture", a fairly recent academic concept, was first used as such during the industrial revolution, even though its history can be traced back as far as mankind's origins. Throughout history societies have undergone constant change as they engaged in cross-cultural contact and interaction. Culture "began to take on its modern meaning at the very moment that it was turned into a controversial instrument by society" (Rosenberg, 1973: 177). The "idea of culture" became formative to the definition itself. "Cultural identity", constructed as a result of

this interaction, could therefore be seen as "fractured and plural" and not "total and universal" (Schipper, 1999: 4). This history of culture represents a record of our reactions, in thought and feeling, to the changed conditions of our common life. In turn, culture can be understood only within the context of social actions. The ideas and feelings of a society are constructed by a complex pattern of social and family life. There are forms of skilled, intelligent and creative activities without which the culture of a given society cannot be debated. These would (essentially) include the productive processes, such as the practical skills of artisans as well as abstract skills such as political activities. However, it should be pointed out that the end product of the collective and/or individual activities, be it practical or abstract, cannot be excluded from the "notion of culture" (Thapar, 2003).

One of the more recent academic debates on culture is based on the recognition of the "cultural gap" that exists between the socio-economical conditions of the west and that of developing countries (Sardar, 1998; Said, 1994). These discussions were initiated and are sustained by a current postmodern discourse whereby societal structures and practises are critically re-evaluated. Such discussions resulted in the creation of a platform for intellectuals, philosophers and academics to deliberate on the "cultural differences" between the west and developing countries (Foucault, 1972, 1998; Hountondji, 1997 and Eze, 1997). The history of imperial domination showed that (even though the end product of labour within a subjugated society was occasionally acknowledged as carrying some value) indigenous processes were in the main kept outside the realm of the debate on culture. Thus, in order to internalise and justify imperialist domination, the human content of these labour processes were repeatedly projected as "uncultured".

This debate had far-reaching consequences. Most importantly it led to changes in researchers' attitudes and perceptions on how culture might be studied. As part of the chain reaction a renewed investigation on the use of appropriate research methodologies was called for. In turn, the introduction of these adjusted concepts and insights will have wide-ranging consequences, not just on academics and their research, but will also have significant impact on civil society. Positioning research to meet the new requirements of ever-evolving communities in the developing world provides exciting possibilities of fresh insights into the structure of existing knowledge systems. This would lead to the convergence of a number of relevant and complex research issues, thereby creating a platform for new fields of research.

This article, straddling the disciplines of cultural studies, design, IKS and PAUS, discusses issues that constitute the core of the discourse. The authors have made an attempt to explore the intersection of ideas and concerns that scholars repeatedly raised in these seemingly divergent fields. The authors have based their discussion on the experience gained during the execution of a cross-cultural, ongoing empirical study of potter communities in India and South Africa. This study revealed that these communities gained experiential knowledge over generations and amalgamated individual pieces of information into a whole system, developed a technical language and designed tools specific to the trade, devised rules of thumb and constructed a flexible, yet structured, sequential curriculum for educating their younger generations.

Culture

The "concept" of culture covers a range of aspects and characteristics and can be summarised as follows:

- Culture is not a spontaneous event but is deeply rooted in the identity of a given society.
- Culture is reflected through everyday activities and rituals with its roots extended over centuries.
- Culture embeds and at the same time reflects society's customs, knowledge (including scientific and technological), art forms, morals, habits, ideologies and politics.
- Culture serves a purpose in economic and technological factors and as a result the identity of a society is reflected in objects used and developed either for daily use or for ritualistic purposes within the society.
- To study cultural objects and the way they are manufactured by artisans in a community assist researchers in gaining insight into related cultural activities.

The "notion" of culture, nebulous as it is, has kept changing in form and content since its introduction in intellectual debates around the beginning of the last century. However, its use as a potent tool to describe and probe various anthropological, archaeological, social, historical, and even political realities, cannot be undermined and should not be underestimated. "Culture", as an analytical or descriptive tool, cuts across disciplines. On the one hand serious debates have taken place around the contemporary workplace culture in offices and laboratories and on the other hand archaeologists have used this notion to
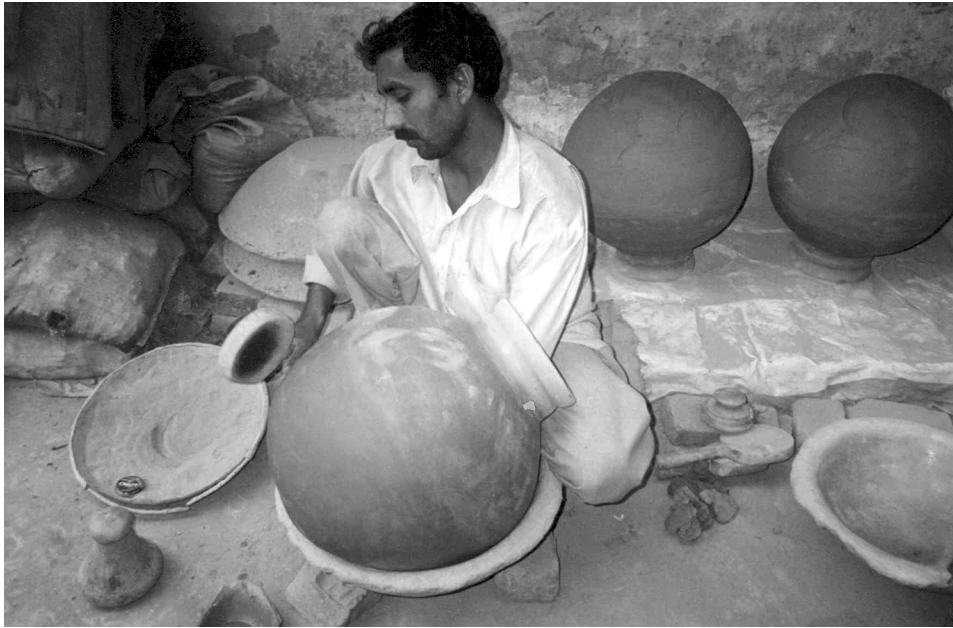
describe the nature of extinct civilisations (Thapar, 2003). Other branches of learning filled the intermediate space on the scale, defined by the discipline or/and the object under investigation.

One of the special qualities of this notion is that culture does not mean anything when studied in isolation. What the subject under scrutiny is and what it is not, constitute the definition of the tool when it is called upon to probe the subject. In other words intrinsic qualities of a community defined by geographical, linguistic or racial boundary are as important as the "other", which is outside this boundary. For example, in the debate on IKS, that what is included in the "indigenous" is essentially defined by what is excluded from it. More often than not this leads to the identification of the intrinsic persona and the similarities and differences with the "other" that is being subjected to scrutiny (Sardar, 1998; Smith, 1999).

A further characteristic of culture is that, though it predominantly implies a whole gamut of accepted, collective and individual activities, including the attitudes and behaviour of a community, the boundary that defines the community has a strong bearing on its implicit or explicit definition. For example, the idea of "black culture" pervades geographical, social and political boundaries. Its contours are defined by racism. All those who have not originated from Africa constitute the "other" at a macro level.

Cedric Ravelle – Giyani, Venda, 2000

The final product: In India the men are the potters, working exclusively on the wheel, with women sometimes assisting in decoration and finishing work. In South Africa women manage the entire production process. The potters wheel is absent in rural African ceramic production.

However, since the notion is embedded in resistance against both a white racial attitude and the subjugation of black races by imperialist invasions, it encompasses a wide range of relationships. At a personal level, the "other" is defined by skin colour and at a global level it expresses the divide between Africa and western countries (Fanon, 1986). Thus when the focus of the discourse is on the attitudes of a micro-ethnic group, the boundaries are narrow and they exclude all other communities, including the so-called "brown" races. Conversely, if the spotlight shifts to resistance against imperialist power structures the contours of the "other" gets blurred and encompasses all those who were subjugated. In summery, the object under scrutiny, the objectivity of the investigation and the positioning of the observer are all factors that impact on the study on culture.

A multi-dimensional concept around "cultural distance" was introduced during the past ten years (Ross, 1991). In the culture of the socially empowered and advantaged it "may take the form of a distance between the art object and reader/spectator: such distances devalues socially and historically specific reading practices in favour of a transcendent appreciation or aesthetic sensibility with claims to universality" (Ross in Munns, 1995: 154). "Distance" may also function to create a difference between the experience of the work of art and everyday cultural life, and may produce conflicting historical meanings and interpretations. This distance from the historical is a distance from bodily sensations, for it is our bodies that finally bind us to our historical and social specificities. Distance is finally a marker of the distinction between "those able to separate their culture from the social and economic conditions of the everyday and those who cannot" (Munns, 1995: 154). Fredric Jameson talks of the "libido" of the group and is of the opinion that "no group 'has' a culture all by itself: culture is the nimbus perceived by one group when it comes into contact with and observes another one. In a sense a culture is the ensemble of stigmata

one group bears in the eyes of the other group and vice versa" (Jameson in Munns, 1995: 628).

Edward Said in the late 1970s has presented a relatively more refined argument and narrowed down the use of the word "culture" to address two aspects. Firstly, it includes all those practices, like the arts of description, communication, and representation, which have relative autonomy from the economic, social, and political realms and often exist in aesthetic form. One of the principal aims of these practices is pleasure. Disciplines included under this practice are ethnography, historiography, philology, sociology and literary history. Secondly, he saw culture as a concept that included a refining and elevating element and acts as a society's reservoir. Said was instrumental in conceptualising the idea and identity of "the other" as a necessary role in identifying "the self". This debate about the role of the other "as a means of forging cultural identity of the self is seen as a political act" (Said, 1978: 221). Culture then becomes a weapon to forge a social identity.

There is a warning against this approach to culture as it may create the possibility of venerating one's own culture and divorcing and transcending it from everyday life. It becomes a protective enclosure that excludes "other" cultures. "

> For a long time most Otherness studies were significantly silent about the question of how Self and Other were described from other perspectives. It seemed as if marginalise groups were only allowed the position of Other, not Self; of object not subject. The Other has become a concept that can no longer easily be dismissed by scholars (Schipper, 1999: 4).

Indigenous knowledge

The debate around culture gets more distorted when culture enters the realm of studies grouped together under the banner "Indigenous knowledge". This notion is frequently called upon to probe micro-systems broadly defined by investigators representing a "modern" point of view. Criticism levelled at social theorists accuses them of a propensity for looking too exclusively at universal social tendencies and sometimes failing to consider the full impact of cultural diversity.

This is best explained by the notion of "cultural distance" as introduced by Raza in India during PAUS research in 1989. This study was undertaken to determine the perceived relationship between the public and science and was empirically placed in terms of the "duration of socialisation in modern education" (Raza & Singh, 2002: 293-309). The

study established that socialisation in modern education is a determinant that influences the worldview of a common citizen. A change in the educational level will bring about a proportional change in the worldview irrespective of other factors. "It has repeatedly been established that a whole host of factors, external to the nature of scientific information such as gender, occupation, access to non-formal channels of information, economic status, pre-disposition to cultural and religious activities and age, have a bearing on the world view of cultural formations and subgroups" (Raza, Singh & Dutt, 2002: 298). A simple method, by means of an analytical model, was later introduced by the researchers through which one can determine the "comparative cultural distance of various scientific concepts and information from the quotidian life of people" in terms of the years of socialisation in modern education (Raza, Singh & Dutt, 2002: 298).

This study was later followed by a study in 2002 on ceramic potters in Janakpuri (on the outskirts of New Delhi, India) and in Gyani (Limpopo Province in South Africa). In villages most households use affordable unglazed earthenware products that are practical, biodegradable and manufactured through the utilisation of low-fired technology, ranging from a simple pit-fire method to rudimentary, as well as innovative, and seasonally re-structured kilns. The potters play a crucial and supportive role in the preservation of the traditions of rural communities by sticking to a number of social rituals and culturally specific products.

The manner in which these potters describe the measurement of the temperature of a kiln varies. Kiln temperature can be measured through a method of:

- Looking at the colour of the pots.
- Listening to the sound of some pots breaking as indication of the kiln temperature reaching its maximum level.
- Measuring the kiln temperature with a thermometer.

All these methods vary but do provide the desired end-results. In combination these methods constitute a scientific approach and indicate that not just any science but the current modern scientific enquiry (as used by the science community), are used. The investigation clearly showed that this is a system that uses a modern scientific framework and applies technological rules for organising the production activities within the community of potters. Conceptually these methods correspond to what science claims to be doing in laboratories.

The use of clay by the traditional potters constitutes an additional support for this argument. A deep understanding of chemical and physical reactions is required for arriving at the right clay mixture to be used at the very beginning of the innovation chain. This action is essential for the proper technological production of the final artefacts. Such experiential knowledge has been acquired by the community, not in scientific labs but in the crucible of social and cultural life over generations. The interpersonal communication among the master potters, between potters and trainees, and the community and outside world, requires language codes and technical terms which over a period of time are standardised. Thus this IKS has its own descriptive language, its own technical terminology, and its own abstract language complete with technical words and a structured curriculum for passing information about the entire innovation chain to the next generation.

Concepts used in IKS might be seen as new, but are in fact quite old. John Dewey, for instance, published a paper in 1938 entitled "Common sense and scientific inquiry" where he argued that "in a cultural environment, physical conditions are modified by the complex of customs, traditions, occupations, interests and purposes which envelops them" (Dewey in Appleby, 1996: 267). More importantly, he discussed the awareness of obtaining knowledge in order to survive and cope with daily life. This he described as the "common sense" that was instrumental in the structuring of cultural groups within their own specific traditions. He designates the environment in which human beings are directly involved with as the "common sense environment" or "common sense world". Enquiries into required adjustments in behaviour he calls "common sense inquiries" (Dewey in Appelby, 1996: 266). A demarcation exists between the gathering of knowledge as scientific enquiry and the way people handle problems that arise in daily life through use and enjoyment of objects, activities and products. As a result intellectual distinction is involved between common sense, good sense and good judgement. Together this may be seen as sagacity to discriminate the factors that are relevant, important and of significance in a given situation. It is the power of discernment.

These ideas were taken further by the Scottish school of Reid and Steward who addressed common sense as "the deliverances of common sense as if they were a body of settled truths" (Appelby, 1996: 267). Therefore, common sense was seen as an ultimate authority and arbiter of philosophical questions. The "common" thereby becomes "general" and leads to universally accepted "common sense". Cultural groups,

settled in specific environments, formulated their own immediate common sense practices (and sets of meanings) "which are so deeply embedded in its customs, occupations, traditions and ways of interpreting its physical environment and group life, that they form the basic categories of the language system by which details are interpreted" (Dewey in Appelby, 1996: 268). On the one hand, the common sense of the community deals with the significance of things and events, balanced with reference to practical matters and "to do what should be done". On the other hand, ideas are formulated and used to direct and justify communal activities and judgements.

Tradition and traditionalism

When reflecting on issues around indigenous cultural systems it becomes imperative to look at the meaning of notions on what constitutes "tradition" and "traditionalism". Tradition for instance can be romanticised and can be studied in all its variety within a time frame. Tradition can also be re-invented, even resurrected, as part of a political/ideological struggle. The use of tradition and traditional practices by Gandhi (the so-called Gandhian framework) in India is an example of this. It could even be seen as creating a framework for "an indigenous variant of socialism where the peasant communities are seen as the self-complete prototypes for a new and utopian social structure" (Kapur in Araeen, 2002: 19). The communist party in India used this approach during the 1950s when the Indian Peoples' Theatre Association (IPTA) merged traditions to socialist ends. Such resurrected traditions are usually based on an "ideal tradition "and used, because of its cultural power, to transform the past into an active (progressive) present. An ideological process is then initiated by placing a barrier between a developing society and the imposing (or imperialist) opponent. This is deemed possible only because tradition is never static but is constantly in a process of transformation, constantly adapting to the changes and challenges of the inventions of modern life (Kapur, 2002: 15-24).

Traditionalism, on the other hand, "is an unstable concept that excludes the response of a culture to external pressure" (Sardar, 1998: 276). Traditionalism leads to fundamentalism and, as it centres cultural values predominantly in the past, leaves little space for the accumulation of "new knowledge". The known is repeatedly used as the only frame of reference, leaving the possibility of change out of the equation. Traditionalism at the same time blinds society and thereby its researchers to the "not known" or the "unknown". Restricting research to matters

considered to be solvable could lead scientists to exclude any vision of "ignorance", thereby coming close to a scientific support of traditionalism. Such scientific "blindness" might cement cultures to an illusionary and sentimental past, while resisting any notion of change or the appropriation of social transformation processes. These are often the very processes that support traditional communities in coping with the modern world and its constantly changing demands. It is between these two concepts (tradition and traditionalism) that the current revival of interest on the inclusion of indigenous knowledge as a research topic takes place.

Science and technology
Since World War II a growing interest is seen in the study of the effect and transformations in culture that occurred during periods of heightened western industrialisation. The effect of this modernisation impacted globally on societies, sub-societies and sub-cultural groups. Technology entered the arena and slowly and insidiously penetrated all spheres of social life. It became more complex and problematic to see "common sense" in a simplistic manner. The social sciences and humanities formed interdisciplinary research links in an attempt to formulate cross-cultural comparisons of the expansion and growth of this technologically fuelled process. This led to "an abundance of undigested facts and paucity of relevant facts that can only be resolved by attempting to rephrase the whole methodology of studying cultural change" (Steward, 1972: 2). New terms, such as "acculturation", "diffusion" and "assimilation" were formulated and applied to accommodate such research.

To get a clearer perspective on cultural practices and processes, the cultural traits of communities and the cross cultural transmission of ideas and practices are now deemed important. This resulted in even more complexity in research. The "technologisation" of science and the way we conduct our daily lives has drastically changed the relationship between science and philosophy. "The worlds of science and philosophy have never existed in isolation, but one could perhaps argue that the relationship between them is entering a new phase. The ubiquitous pressure to do applied research certainly has something to do with it, but there is also another, overtly less political, reason: the immense increase in the importance of technology" (Cilliers, 1998: 1). We use technology but do not always understand its basic workings – just as we do not necessarily understand its underlying scientific principles.

In a historical sense technology is considered to be part of the "method of science" (Ziman, 1984: 115). During this cross-cultural research project between India and South Africa new awareness around this topic was created when observing a traditional master-potter training an apprentice. The master-potter passes on a lot of "method" (scientific knowledge) to his young learner. This kind of knowledge was previously regarded as of no scientific importance as it lacked "real" scientific formulae or scientific language and (in past scientific terms) could not be codified. "Nevertheless, there is a historical tendency for all crafts to become codified as technologies, and for all technologies to give birth to regular sciences intended to bring the craft under predictive control. This tendency is clearly one of the most significant instrumental characteristics of sciences in modern society" (Ziman, 1984: 116).

The still somewhat negative perception of the knowledge base of traditional (indigenous) artisans needs to change. With the introduction of science communication and PAUS, it is now possible to ask the question: how much science do people actually know? As this question coincides with a renewed interest in research on the practice of IKS and indigenous technologies, recognition should be given to the level of scientific knowledge of indigenous societies. The need exist to measure this level of knowledge and to translate it into scientific formulae and codes.

The documentation (and interpretation) of layman's terms used by indigenous communities needs to be undertaken with the same urgency. Measuring and translating these codes serve a very practical purpose: the responsible transfer of technology and product innovation can only take place once these scientific terms can be understood and shared between indigenous crafts makers and the practitioners (designers and engineers) of modern science.

The practical applications and implications of this argument are not simplistic. Durant discussed two perspectives, summarised in two distinct models, for capturing such a science communication process (Durant, 2000). The one model, called the "deficit model", sees the public as being ignorant of or misunderstanding the facts, theories and processes of modern science. This is considered to be a linear model. The other model, called the "democratic model", identifies the public's lack of confidence in the decisions being made on its behalf in science and technology. This model then suggests a two-way communication process that will enable dialogue between scientists and non-scientists. The use of either the one or the other of these models could result in very

different outcomes (Durant, 2000). The crux of the matter is that there has to be an understanding of what local communities want and, at the same time, to acknowledge what local communities are already doing.

Culture, design and IKS

Environmental involvement, based on the "common sense" behavioural adjustment of people is the essence of IKS. These systems are intimately linked with a community's culture whereby culture can be loosely summarised as "the complex of values, customs, beliefs and practices which constitute the way of life of a specific group" (Eagleton, 2000: 34). IKS could function as both a cohesive structure that keeps societies together and at the same time as accommodating agent in change due to outside influences being absorbed into its core structures. The study of artefacts, such as pottery, produced within a community, both for ritualistic and utility use, therefore serves as a means of entrance into studying the culture of a community. The important criteria for these artefacts are their traditional connection to indigenous technologies, manufacturing systems and cultural uses.

Our epistemological knowledge of artefacts as used by society usually gives us a clue to the needs of the culture using these objects. The cultural involvement of a society in the manufacturing process and technology of the artefact is generally read as an indication of the level of scientific sophistication of that community. Here we find a strange contradiction of values as the free use of high technology (for example cellular phones) becomes easily absorbed in a society that is still embedded in traditional technological practices; a society that might sometimes be referred to as being "less advanced". This aspect somewhat blurs the conventional concept that the artefacts used in a community equals cultural sophistication.

How do we approach a study of society where the traditional potter, for instance, use traditional techniques and technologies of manufacturing while taking orders for their products on a cellular phone? The answer might well be positioned between the accepted academic structures of investigation and science as a knowledge system. How do we measure this knowledge? By looking at science through the lens of culture? By looking at culture through the lens of science? By engaging new fields of enquiry in this process, thereby creating new paradigms of social constructs?

If a route following alternative research paradigms is undertaken, it will, by implication, necessitate multidisciplinary approaches to the

research of cultural artefacts. This will accommodate active engagement with the culture of the society studied. An opportunity is thereby created to get a first-hand look at cultural uses, needs, as well as culturally specific designs during the manufacture and use of utility objects. This brings the researcher closer to the community. And by expecting him or her to honour the inherent IKS of the community an opportunity is created to critically evaluate the traditional techniques used by the society. This process challenges concerns raised that cultural objects could be reduced to mere consumer commodities through insensitive research methods and culturally insensitive appropriation by researchers.

Conclusion

Cross-cultural and multi-disciplinary research on IKS and PAUS between India and in South Africa provides an opportunity to get fresh insights into these complex issues. It becomes clear that indigenous knowledge has value, not only for the culture that it upholds, but also for scientists, policy makers and planners. The changes consciously brought about in a society by researchers and government may not yield desired results if the aspirations of the people that practise IKS are not taken into account when restructuring policies. On the other hand communities that embody IKS should not be considered culturally and technologically "frozen", "non-innovative" or opposed to interaction. It would be erroneous to consider them as "black boxes" to be opened by the researchers, studied and left as they are. The pace of change that takes place within the traditional systems – for various social, economic, cultural and at time political reasons, varies a great deal and do exude an influence to a wider audience. History, for instance, tells us that "such groups and sub-groups have always played a significant role in resistance and freedom movements all over the world" (Smith, 1999: 40). Indigenous knowledge research can therefore be seen as part of the liberating struggle within developing countries – a liberation struggle for freedom from outside dominance.

Colonialism created discontinuities in the cultural, scientific and economic life of the people in developing worlds. The rampant exploitation of the natural environment was justified on account of enlightenment projects – the outcomes of the so-called hard sciences of the west – marginalising the knowledge and culture of indigenous people. The desire of society to revive the importance of people's knowledge systems to help restore their human dignity should be valued.

Indigenous communities must be recognised as a source and the custodians of this valuable knowledge. At the same time such knowledge must be freely disseminated and shared to ensure its growth. Care should, however, be taken not to romanticise these indigenous structures as it is but natural that most indigenous systems contain elements which could be categorised as regressive and oppressive. Therefore, in the process of reviewing the human dignity of a given society, one cannot be romantic and justify the continuation of that which even these systems are trying to reject. Science communication creates the platform for creating some solutions to these problems.

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