PRINT: ISSN 0970-9274 ONLINE: 2456-6608
J. Hum. Ecol., 12(3): 233-237 (2001)
DOI: 10.31901/24566608.2001/12.03.12

Folk Wisdom and Cognition: An Exploratory Appraisal on Ethnoscience

Soma Bandyopadhyay

FOLK COGNITION OF PLANT DOMAIN

The Kol inhabit east Singbhum where the floral domain acquires a dominant share in their life. This intimate dependence upon the vegetation of their habitat has made them thoroughly acquainted with the plants growing within their territory of interest (Gilmore, 1932: 320). A thorough acquaintance of the floral world when is fashioned with the common sense of the people, the folk cognition of plant domain is naturally expressed by certain socio-cultural process of learning. Common sense beliefs when more precise are universal propositions that people commonly hold (Moore, 1953: 2-3). Common sense is regarded as a precondition of folk cognition for its universal acceptance. When the universality of ideas reaches the level of supremacy it is regarded as human cognition *vis-à-vis* folk cognition specially when a particular folk has been chosen as a unit of studying the ethnoscience.

Empirically indigenous perception of the Kol needed a variety of well articulated modes of folk thinking which facilitated inherent differentiation of components in human nature acquired over millions of years of biological and cognitive evolution (Atran 1993: ix-x).This encounter with the natural world leads the formation of a biotic interrelationship between the people and their biological world. The study of this interrelationship later is designated as ethnoecology (Fowler 1977: 215).

In the present study, the researcher concentrated on the hypothesis that the features of the specific organisms tend to be perceived as a gestalt or configurational unity rather than a discrete list of properties (Hunn, 1976). While among the Tzeltal and Sahaptin, Hunn highlighted the point of short term memory of the folk. The short-term memory may stand for peoples' categorization of multi-attributed objects. To reduce the load of short-term memory, Bruner, et al. (1956) described two major techniques: attribute reduction and configurational recoding.

The data indicated after using these two techniques the fact of basic partitioning and involvement of the construction of well-bound configuration or morphotypes. These morphotypes (or visual types) were stored by comparing the mental image of whole specimens as whole, which Cullen (1968: 176) defined as Gestalten. The members of the Kol community configurationally recoded into a mental image of gestalten having a number of features chunked together. Plant was indigenously conceived with the help of these chunked features, which the plants inherit to store about its mental image of plantness (Fig. 1).

Cultivated, Protected and Wild Plants, Their Cognition and Categories

The cognition of the Kol of a specific domain is the result of universal common sense. A deep rooted common sense of the Kol about a particular domain can be expressed in the idea of separating one variety from the another. This job of separation leads to categorization of different kinds and folk classification emerges. So, in depth cognition of the Kol about a specific domain leads a perfect folk classification which may or may not be similar to biological classification of that domain. Beginnings of classification were inextricably bound to the practice of cultivation (Li, 1974). Among the Kol this type

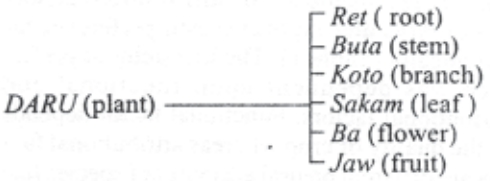

Fig. 1. The Kol use these configurational attributes for identifying Daru

of bindings were not so prevalent but the cultivated plants were clearly cognitized because of their close relation to different cultivated plants for their economic pursuits. It has been seen that the cognitive categories of different types of plant were essentially functional reflecting the primitive mode of ideas (Morton, 1981: I).

Cognition of different categories of plant domain began with the place of their availability. Plants available within the place of residence were separated from those available in the forest. *Oth* (land) was conceived as one of the important aspects of their fundamental niche. The *Oth* had been classified into two categories, such as *Asul ote* (village land) and *Bir ote* (forestland). As the land variety was categorized similarly, the plant species grown in different lands were also categorised in different ways. Plants raised in *Asul ote* were separated from those of *Bir ote*. This separation was stored into their mind and was expressed through their cognition in the dichotomy of *Rohoy* (domesticated) and *Bir* (wild).

When cognition was compared, the author had seen that the domain of *Rohoy* variety was more widely cognitized than that of *Bir* variety. The *Rohoy* variety included both cultivated and domesticated varieties of plant. The Kol had the idea that anything, which was found within the *Asul* (village) and looked after could be designated as *Rohoy*. During the field work the author tried to gather ideas about those plant species which existed prior to the setting of the village. The Kol were not ready to separate them from *Rohoy* category. They were of the opinion that these species were maintained by the villagers, so they should be included in the *Rohoy* category. It was noted that the indigenous terminologies seldom differentiated as domesticated and cultivated varieties of plant.

The community under study was of settled agriculturists and their main crop was paddy (*Baba*). The members identified different species of *Baba* and expressed their preference hierarchically (Table 1). The hierarchy of preference was dependent upon functional and attributional factors. Functional factor depends on the quality of crop whereas attributional factors are different natural attributes of species like quantity of yield, water resistance, susceptibility to paste and some other alike factors.

East Singbhum area is an undulating landscape where cultivable lands are located at different levels. According to the level of lands, the species of crops to be cultivated had been selected. Water is unevenly available in different lands. Accordingly the folk (the Kol) knowledge prescribed specific variety of crop for cultivating in a particular land considering its capacity of water retentivity in different levels. The Kol identified the lower most land level as *Bohal ote*. Their cognition indicated the view that *"Bohal Ote Baba Bhugin te Baba"* meaning paddy variety cultivated in *Bohal* land was of good quality. The lower most land facilitates lodging of highest quantity of water and this practical fact prescribed the Kol to cultivate paddy variety which can thrive in high water retentive lands considering its water resistant capacity. In this sense *Bohal baba* was proved to be highly productive. *Chandrakanti baba* was another variety, which was cognitized by the Kol as a beneficial one both in terms quality of crop and higher yield per acre of land.

Cognition of the domain of protected plant was found to be highly purposive. Plants which people considered as protected were not only kept apart from injury but they were protected for some utilitarian factors also. Perspective of protection was expressed through two different modes of cognition. Some plant species were extended more protection as they were considered to be directly or indirectly related to religious beliefs. Some other plant species as more precisely parts of different plant species were protected for survival of those species. People always tried to emphasise their conventional perspectives and cultural transmission of those perspectives through generations. But the researcher tried to probe the indigenous logic behind the consideration of several species for protection. In most of the cases it was found that the logic behind their consideration was at

Table 1: Land types and yield of paddy varieties

Land types	*Paddy variety*	*Tentative yield per acre*
Goda	*Goda baba*	7.5 khachi*
Dhipa	*Majhi baba*	12.0 khachi
Ghotu	*Samuddar baba*	12.0 khachi
Sal/Bohal	*Chandrakanti baba*	17.0 khachi

*1 *Khachi* = 40Kg = 0.4 Quintal

per with the scientific logic of conservation of species.

Cognition of the Kol about protected plants was not limited within the village boundary, some wild varieties were also included under the domain of protected plants for different useful purposes. The Kol were of opinion that *Sarjom* (*Sohrea robusta*) should be protected with maximum effort as this plant was directly related to their *Bonga* (village deity). This cognition of protection varied according to the plant was grown. A *Sarjom daru* found in sacred grove was considered as sacred trees and the community members were not allowed to make even a scar mark on these sacred trees. But on the contrary the Kol seldom hesitated to cut down logs of wild *Sohrea robusta* for the purpose of erecting their houses.

Thus the same plant species offered dyed expression: utility *vis-à-vis* protection. In case of sacred *Sarjom* the Kol were bound to sale the tree to an outsider which fallen due to natural hazard. Their cultural prescription dictated them to keep their eye off from the uprooted sacred *Sarjom*, which was worshipped as a relic of abode of *Bonga*. Regarding *Sarjom sakam* (leaf of *Sohrea robusta*) the cognition of protection was highly supported by their own logic. *Berel Sarjom sakam* (tender leaf of *Sohrea robusta*) was never detached from the tree but when they lost their Chlorophyll and turned into *Rohor* (dry leaf) they were excluded from the domain of protection. These dry leaves were collected from the female folk to prepare *Thali* (leaf plates) to earn some money. Thus cognitive view points were expressed both in consumption and economic pursuits. In view of the divine desire of *Bonga* the matured *Sarjom* leaves were protected. There was a belief that *Hadam sakam do Bonga balo hataoa* means *Bonga* never accepts mature leaves. The reason of protecting matured leaves was not clear but it was witnessed that the dry leaves of different plants were collected and were used as fodder for different domesticated animals. Rotten leaves of different species were assembled to prepare *Khot* (manure). This natural manure was used in kitchen garden to raise different leafy and green vegetables. In the cultivable lands located in higher levels this *Khot* was added to get good production. This may be one of the reasons of protecting matured leaves from any kind of wastage.

Use of tender leaf of several species was highly restricted specially, during *Aghan* (middle of November) to *Magh* (middle of February) of each year. The Kol cognitized this restriction as a protective measure. Almost all the plant species present within the fundamental niche excepting a few were found to be of deciduous type. Naturally the period mentioned above is the time for those trees to grow new leaves. The Kol were not conversant about the deciduous identity of plants but their prolonged relation with nature taught them the fact that the tender leaves of different plants needs maximum protection within this period of each year.

Intake of *Bale bili* (immature fruit) of several plants was restricted because they believed that if they are consumed they would not find scope for necessary germination. So the propagation of the plant species would be disturbed. Leguminous plants like *Sajina* (*Moringa pterygosperma*) were never consumed prior to the maturity of *Punga* (legume) as a measure of preservation of the species by protecting its seeds.

Another important feature of protecting different useful plant species was the measure of cutting down the branches. The branches of big trees especially those, which were found to be very close to a residential house, were shaped in an interesting way. Not a single *Changra* (branch) of a *Buta* (stem) was allowed to grow in such a manner that the growth of the plant became one sided. The cognition prescribed to the fact that a plant with one-sided growth may sometime lost its balance causing severe damage to the *Oah*.

Protection of *Sahan* (firewood) was another feature to be considered. Plant species like *Hesel* (*Anogeissus latifolia*), *Edel* (*Bombax malabaricum*), *Kasmar* (*Gmelina arbores*), *Babla* (*Accasia arabica*) were preserved with special attention. The necessity of getting *Sahan* the *Kol* liked to protect these species for attaining their proper maturity. Though the preference of *Sahan* depended upon the quality of *Julu* (burning) but the Kol were conscious about preservation of all the Sahan yielding varieties.

Some plant species have been identified as *Ret daru* meaning plants bearing some natural qualities, which helped in preparing *Ret*

(medicine). Special attention was given to those species precisely for their use. It is true that the medicinal plants were not cognitized by all the people. The *Ojha* (the village medicine man) was found to be highly concerned with these *Ret daru* species who used these *Ret daru* to produce medicines. Here the cognition of *Ret daru* was more individualistic rather than universalistic.

It has been already pointed out earlier that the Kol live in forest hill region of east Singbhum. Cognition of *Bir daru* (wild tree) was precisely related to utility. They were of opinion that out of thousand of species found in the forest only those they knew which were of use for them. Wild trees were mainly perceived according to the nature of *Sahan* they yield. Wild herbs were perceived sometimes for medicinal purposes and occasionally for consumption purposes. Wild *Babai ghaas* were utilised in making ropes.

Use and interest dichotomy of understanding: The universe is an object of thought at least as much it is a means of satisfying needs (Levi Strauss, 1966: 3). It was found among the Hawaiian ethnobiology that every botanical, zoological or inorganic form that was named was "some thing" used in "some way" (Handy and Pukui, 1953: 127). Levi Strauss remarked that to characterise something as of no use is quite apart from it being of no interest, as 'use' concerns practical and 'interest' theoretical matters (Levi Strauss, 1966: 3).

Viewpoint of ethnoscience analyses the folk point of view and their subject matter as reflecting intellectual cognitive process of comprehending the world, a process motivated by 'interest' first of all. This approach has been fruitful and generated models of cognitive and linguistic process underlying natural categorisation (Berlin, 1976; Kay, 1971, 1975; Rocsh, 1978). Such condition of immediate dependence upon the vegetation made the folk acquainted with the plants growing around them and keeping a practical interest (Sengupta, 1998: 2). Contrary to this interest perspective Berlin (1978: 10–11) indicated the fact that the members of Tzeltal Maya of Mexico and Aguaruna Jivaro of Peru named many plant species. More than one third of those named species in both the societies had no known social use, nor they were poisonous or pestiferous. But Berlin's contradictory view was considered as undue stressing of disinterested intellectualism of the informants (Hunn, 1982: 831). Knowledge about anything must be useful that is adaptive. This argument of the naturalist anthropologists was crude, because this was measured in energetic terms. Thus 'useful' was reduced to a caloric count or an economic cross-benefit emphasis. In this way of understanding Levi-Strauss interpreted the term 'use' as opposed to 'interest'. The researcher was of intention to uncover the domain of cognition about plant species both from 'use' and 'interest' perspectives. The facts found among the community in question were sometimes supportive to Levi-Strauss's 'use' – 'interest' binary opposition. On the other hand the researcher was very cautious about undue stressing of disinterested intellectualism of the informants. Even maximum caution could not conceal the fact of peoples' interest about some species having no known social use. But the extent of this interest was in no way closer to Berlin's study among the Tzeltal Maya and Aguaruna Jivaro communities.

The Kol exhibited some interesting features in the life-form within the plant domain. The Kol included *Uurn* (mushroom) within the life-form of *Daru* (plant). They named some genera of mushroom and strikingly aware of their morphological features, colour, habitat and so on. The Kol did not consume mushroom and therefore it did not serve any economic purpose. The informants were of opinion that excepting a few varieties mushroom was not poisonous. It created to no harm to the survival of the folk in any way. Here interest was discernible which Levi-Strauss had opposed to the "use" perspective. On the contrary in lesser extent it supported Berlin's view in this context. Because the interest rather than cognition about the mushroom was set into the minds of the folk and was expressed even in the short-term memory where from successful application of attribute reduction was resulted. The short- term memory of the Kol about mushroom is presented in table 2.

The life-form status of the aquatic plant was not expressed by a definite lexeme. Aquatic plants were identified as a covert category (Berlin et al., 1968: 298). The Kol identified the aquatic plants as *Da-aran-tini-daru*. The prefix *Da-aran-tini* meant anything living in as well as under water. As the aquatic plants did not have

Table 2: Expression of the Kol cognition of Uurn (mushroom)

Name of the Genus	*Morphological identification through colour*	*Specification*
Simdali	*Arah-punde* (reddish white)	Non-poisonous
Pata	*Punde* (white)	Non-poisonous
Murum	*Hende-punde* (blackish white)	Non-poisonous
Guri	*Punde-sasang* (whitish yellow)	Poisonous

any distinct nomenclature, it should be included in the covert taxa (Sengupta et al., 1996: 24). The Kol identified *Jilet* (*Pogonatum microstomum*) as a generic-specieme included within *Da-aran-tini-daru*. The generic-specieme had no known use among the Kol but the people had to pay interest on this plant species because it was slippery in nature and grew aside *Gendre* (local stream). So before coming to bring water from *Gendre* or to take bath the folk restrict their foot steps where *Jilet* was present to avoid any kind of injury to themselves. This fact was supportive to Levi Strauss's assumption that something to be of no use does not necessarily mean that the thing should be of no interest (1966: 2). Thus the community which Levi Strauss studied while writing. *The Savage Mind* and the Tzeltal and Aguaruna by Berlin had separate identity regarding their cognition of use and interest dichotomy. The Kol studied by the researcher possessed such a grade of cognition, which was distinct from both the communities, mentioned *ut supra*. The successful exploration of some factors responsible for fashioning of human cognition, about a particular domain of fundamental as well as realized niche was performed.

KEY WORDS Tribal Folk. Fundamental Niche. Attribute reduction. Configurational recoding. Protected Plant.

ABSTRACT The Kol as tribal folk inhabiting within the sphere of their fundamental niche, cognize essential existence of the folk floral environment at the outset for food. This intimate dependence empirically expresses the perception of folk thinking. The data revealed after using methods of attribute reduction and configurational recoding of folk's cognition upon visual types of plant from the leaves. Seldom the stem and the root come within the visual identification. The folk used precisely from their mental image the position of the root in plant domain instead of leaves. Their cognition differentiated between the cultivated, protected and wild plants. This job of separation leads to categorisation of different kinds of plant and cognition of folk classification.

REFERENCES

Atran, Scott: *Cognitive Foundations of Natural History: Towards an Anthropology of Science*. Cambridge University Press, Canada (1993).

Brent, Berlin O.: The concept of rank in ethnobiological classification: some evidence from Aguaruna folk botany. *American Ethnologist*, **3**: 381-399 (1976).

Brent, Berlin O.: Ethnobiological classification. In: *Cognition and Categorization*. E. Rosch and B. Lloyd (Eds). N. J. Lawrence Erlbaum Association Ltd., Hillsdale (1978).

Brent, Berlin O., Dennis, Breedlove and Peter, Raven: Covert categories and folk taxonomies. *American Anthropologist*, **70**: 290-299 (1968).

Bruner, J.S., Goodnow, J. and Austin, G.A.: *A Study of Thinking*. Wiley, New York (1956).

Cullen, J.: Botanical problems of numerical taxonomy. In: V. Heywood (Ed.): *Modern Methods in Plant Taxonomy*. Academic Press, New York (1968).

Fowler, C.S.: Ethnoecology pp 215-243. In: D. L. Hardesty (Ed.): *Ecological Anthropology*. John Wiley and Sons, New York (1977).

Gilmore, M.: Importance of ethnobiological investigation. *American Anthropologist*, **34**: 320-327 (1932).

Handy, E.S.C and Pukui, M.K.: The Polynesian family system in Ka–u, Hawaii. *Journal of the Polynesian Society*, **61**: 123-168 (1953).

Hunn, Eugene S.: Toward a perceptual model of folk biological classification. *American Ethnologist*, **3(3)**: 508-524 (1976).

Hunn, Eugene S.: The utilitarian factor in folk biological classification. *American Anthropologist*, **84(4)**: 830-847 (1982).

Kay, Paul: Taxonomy and semantic contrast. *Language*, **47**: 866-867 (1971).

Kay, Paul: A model-theoretic approach to folk taxonomy. *Social Science Information*, **4**: 151-166 (1975).

Levi-Strauss, C.: *The Savage Mind*. University of Chicago Press, Chicago (1966).

Li, H.L.: Plant taxonomy and the origin of cultivated plants. *Taxon*, **23**: 715-724 (1974).

Moore, G: The commonplace book of G.E. Moore 1919-1953. C. Lewy (Ed.). Allen and Unwin Ltd., London (1962).

Rosch, E.: Principles of categorization pp: 27-48. In: E. Rosch and B. Lloyd (Eds.): *Cognition and Categorization*. Erlbaum Hillsdale, Nj (1978).

Sengupta, S.K.: Folk perception of environment: unveiling the cognitive foundations of certain domains. *Sectional Presidential Address of Anthropology and Archaeology Section. Delivered in the 85th Session of Indian Science Congress Association (1998).*

Sengupta, S.K. and Bandyopadhyay, Soma: Folk taxonomy: the case of a tribe. *The Journal of Department of Anthropology*, **3**: 19-26. (1996).

Author's Address: **Soma Bandyopadhyay,** University Senior Research Fellow in Science, Department of Anthropology, Calcutta University, Calcutta, West Bengal, India