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## **Scientific Language and Thought in an African Indigenous Knowledge System: About Dagara Cultic Institutions and Frames of Thought**

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**Abstract:** The African indigenous knowledge system, like any academic discipline, has its own specific language and jargon as a created symbolic system, which it uses both to see and understand the reality that is the focus of its study and subsequently to document, communicate, and further increase its knowledge content. However, it is generally the case that “scientific colonialism,” as Galtung puts it (Galtung 1967), in African indigenous knowledge as a science has led to a distortion of the language and culture used to understand African knowledge generally and, by extension, a distortion of the theoretical and philosophical underpinnings of thought. This article takes the view that scholars of African indigenous knowledge and science need to tackle the issue of scientific decolonization in order to generate and understand the scientific lexicon through which this knowledge system has come into existence. This article focuses on the ethnographic description and analysis of cultic institutions among the Dagara of northwest Ghana, within which knowledge paradigms and thought frames are embedded.

**Keywords:** Scientific Language; Dagara People; Thought Frames; Scientific Colonialism; Indigenous Knowledge

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### **Scientific Language and Thought in an African Indigenous Knowledge System: About Dagara Cultic Institutions and Frames of Thought**

#### **Introduction: The Language of Indigenous Knowledge**

The correlation between the development of language and the culture of science, both in terms of methodology and theory and cultural practice, is difficult to understand. Is the culture of science a distinct human endeavour separate from the

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development of language as a codification of human creativity? Is scientific culture embedded in language and lodged in the human mind or thought faculties and responsible for reasoned order? (Sahlins 1976). Or, on the other hand, is language simply a structure and structuring mode via which the human mind makes things intelligible (Lévi-Strauss 1953); or, is it just the generating capacity of the various linguistic competences that come with human nature?

Beyond the existence of language as speech, every knowledge system has its peculiar language and jargon created as a symbolic order, which it uses to see and understand the reality that it chooses as a focus of understanding. Whereas knowledge of self and environmental awareness<sup>1</sup>, mainly through perception, starts within infancy and prior to the acquisition of language as a way of knowing, scientific knowledge is initiated and developed as part of human language and culture—the innate generating ability to learn to speak and create meaningful signs, symbols, and gestures and to understand them. According to the linguists, and as we can observe from the variety of human languages and types, the innate quality of the generative scheme of language does not lead to or dictate a common system of signs and symbols for all human societies and cultures. Instead, it leads to the development of unique language systems based on the arbitrary selection of signs and symbols and a unique but consistent construction of grammatical rules and syntactic structures peculiar to each language. This is notwithstanding the fact that, in terms of speech, all human voices are limited to a common phonetic alphabet, permitting us to learn languages and to code-switch in the use of these languages. Based on this understanding, the growth of knowledge in every society and culture begins with a certain indigenous understanding of science as peculiar knowledge awareness. In other words, the term “indigenous knowledge,” as used here, refers to that scientific knowledge proper to a unique language and culture as it develops its own arbitrarily selected signs and symbols based on the physical and social environment from which language has emerged and developed. Indeed, I will define indigenous knowledge in general as knowledge that is innate to a social group and comes with the group’s development of speech as the foundation of their linguistic competence to symbolize and further systematize their thoughts and ideas about themselves and their living environment into a body of knowledge.

In as much as it is important to establish the theoretical basis for my subject of study—namely, language use in the study of African (Dagara) art, religion, and medicine as one common discipline within an indigenous knowledge system—this cannot be done within the context of an article. I have therefore opted to give a detailed presentation of the ethnographic material constituting the subject, since the

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theoretical and philosophical reflection of this peculiar knowledge system seems to be embedded in cultural practice. Moreover, it is also the case that “scientific colonialism,” as Galtung puts it (Galtung 1967), of African indigenous knowledge as science has led to a distortion of the language and culture used to understand African knowledge generally and, by extension, the distortion of the theoretical and philosophical thoughts underpinning them. The distortion is most prevalent in the very three knowledge areas that are the focus of my current study, namely indigenous medicine, religion, and art. Hence, it is not uncommon to read such ill-defined terms as herbal, divinatory, and therapeutic practices as canons for the study of indigenous medicine, or for one to encounter such negative terms as sorcery, witchcraft, satanic, and magical in the literature on African religion and art.

This article takes the view that scholars of African indigenous knowledge and science, as areas of study, have hardly begun to tackle the issue of scientific decolonization in these fields, much less to generate and understand the scientific lexicon through which this knowledge system has come into existence. Hence, it is important, first, to deal properly with the events that have led to the colonial distortions before attempting to decolonize and reroute the mode of access to indigenous knowledge. Two forms of distortions that need to be tackled include the old missionary practice of wanting to replace African religion with Christianity through negative representation and the old colonial educational pedagogy of presenting Western science as an intrinsically objective and universal knowledge system unmediated by any cultural tradition; these issues continue to impede the development of any African scientific language. It is my belief that a re-examination of ethnographic material within a culture-specific paradigm would open new perspectives to deal properly with indigenous science. Hence, throughout the article, ethnographic data from the Dagara people of northern Ghana will be used to draw attention to the fact that African (Dagara) religion and art contains the basic lexicon which needs to be developed as a scientific language for any proper study of the Dagara medical knowledge system. The ethnographic material comes from my many years of research into Dagara religion, art, medicine, and their culture of hoe-farming (Tengan 2000, 2006, 2012).

The supporting data is basically a cultural study of four knowledge-based institutions in Dagara culture, often presented as cultic institutions within anthropological literature. They consist of the cult of the ancestors (*kpîîn*) and the cult of reasoned order (*bagr*), both commonly found in each Dagara homestead; the cult of primitive being of past order (*kɔntɔn*); and the cult of the universal

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living structure of the cosmos (*tibr*). The last of these, the cult of the cosmic structure, has two other associates attached to it, namely the earth cult (*téngan-tiε*) and the rain cult (*sà-dug*). The correlation of these six institutions is best visualized as four concentric circles that map out the worldview of each individual and the community at large. It is beyond the scope of this article to map out these correlations and analyze in detail each institution. I shall, however, focus on the first institution, the cult of the ancestors, as part of my ethnographic illustration. The case of indigenous thought and knowledge has a peculiar history of its own. As such, let me first deal with the position of indigenous knowledge within the history of science in Africa generally before focusing my attention on the Dagara knowledge of religion, art, and medicine.

### **African Indigenous Knowledge and the History of Science in Africa**

There is a long history regarding the study of African indigenous knowledge systems, even though the term might appear to be recent. This long history has always been intimately linked to the way foreign minds have come into contact with the African mind and system of thought. The two most significant foreign contacts with indigenous Africa are the Arabic culture, which is linked to the Islamic religion, and the European culture, which came along with Christianity. I shall not dwell in detail here on the impact these contacts have had on the growth of indigenous knowledge in Africa, but I will mention that they both had a common perception about black Africa and its populations, which impacts enormously the way indigenous knowledge is perceived and studied even today. In both traditions, prior to contact with Africa, there had already developed the notion that the canons of knowledge, especially scientific knowledge, were divinely revealed as written text and recorded in a holy book, such as the Bible, the Torah, and the Quran. Each known human race and population, as perceived at that time, had its own “holy book,” indicating the path to human civilization. Written language became the mark of rational reasoning and the two, writing and rationality, became the main distinctive features of scientific thinking and cultural progress. It will be beside the point for me to attempt to trace here the historical effect that the evolution of these ideas has had on the pursuit of scientific knowledge and the impact it has had on indigenous knowledge in general. My focused attempt to outline the frames of thought within which indigenous knowledge has been developing in Africa—using ethnographic data from the Dagara/Lobi peoples in West Africa—will better explicate these issues.

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### **Anthropology, African Studies, and Indigenous Knowledge**

Having said the above, it is still essential that I put the approach to scientific knowledge in Africa in perspective. Fifty years ago, the first modern African Studies institute was established at the University of Ghana, Accra. It is heartening to note that the founders of this institute spelled out very achievable goals within a focused area and discipline, namely to “study the history, culture and institutions, languages and arts of Ghana and of Africa in new African centred ways” and to “reassess and assert the glories and achievements of our African past and inspire our generation, and succeeding generations, with a vision of a better future” (Nkrumah 1963). For the past fifty years, the institute, and indeed most other similar institutes that followed, stuck to these goals and a lot has been achieved, mainly in the fields of African historical reconstruction, cultural aesthetics, and African contemporary socio-political institutions and practices—at least we have gone beyond the conception that African political systems are all about kinship. Though the method and conceptual frameworks have largely followed Western academic norms, the studies made in these fields have shaped a new and positive understanding of the African experiences in these domains. This, however, cannot be said of such major areas of African indigenous knowledge as art, religion, medicine, and the scientific language used for their study. For the rest of this article, I first outline the impediments that have hindered progress in these knowledge areas. Secondly, I discuss briefly the nature and character of African knowledge frameworks and how the distinct separation between religion, art, and medicine as unique knowledge disciplines leads to their mischaracterization and the false understanding that they are true scientific knowledge. Lastly, as a case study, I give an ethnographic outline of the thought frames and thinking processes among the Dagara people in West Africa.

### **Negativity and Narrow Minded Views**

In the first year of my anthropological studies in Leuven, a distinguished African professor of linguistics jokingly reproached me for studying a discipline that is not really scientific. In his words, anthropology limits its discourses, fields of research, and study to specific substrata of human beings and their cultures. He made me feel that by opting to become an anthropologist, I was selling out my own continent and people. Since anthropology allows mainly Europeans to pose their gaze at mainly Africans and their culture but will not do the same to their own society, it is insulting to pose my own gaze at my own people as if I was not one of them. A few months after my encounter with the African professor of linguistics, a

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well-known European professor of anthropology jokingly remarked that anthropology was no longer an interesting discipline because Africans have started to specialize in it. This was after he learned that I was studying anthropology. I was able to deal with the two remarks by reminding myself that I had chosen to study anthropology out of my own interest and motivation, and any time one or two persons made similar remarks I would retort with the common saying that there are as many anthropologies as there are anthropologists.

As a discipline, anthropology, starting as ethnology, has throughout the decades thrived by appealing to European thinking consciousness that native cultures are “exotic,” very different from their own, and, perhaps, bizarre and incompatible with Western technological and scientific culture. Native cultures, by being exotic, do not constitute components of the real world and have no scientific truth or value. At the same time, via the discourse of enlightenment and modernity, Europeans were given the impression that they have lost the memory of their “primitive” times, and to understand their own primitive culture, which was in existence at one time, they have to study African culture. Once this consciousness was created, ethnology then gave itself the task of documenting “exotic” cultures and analysing “primitivism,” first to satisfy European curiosity about the exotic and second to inform them about their own past, a past which belongs equally to the realm of unreality. The fear that primitive cultures were being destroyed, in a similar manner as the European past, by modern civilization and the fact that, as oral cultures, they had no writing systems to effectively record their own traditions, made the work of ethnography most urgent (Tengan 2000).

### **An Anthropological Perspective on African Scientific Knowledge**

For a long time and still today, many scholars of African studies, intellectuals, and politicians, have viewed engagement in the study of anthropology as openly agreeing with the premises upon which anthropology has thrived and as tacitly accepting the promotion of the ideals lying behind the premises. They unconsciously felt that anthropology, through its method of reductionism and ethnographic analysis, was consciously and systematically demystifying the core cultural components around which the African life-world has been built and, by the improper use of negative language, destroying the scientific value embedded in those components constituting the African worldview. In other words, the anthropological analysis, by itself, threatens to destroy native cultures through the analytical practice of gaze and disclosure, and through negative representation. As a result, and in order to preserve themselves and their societies from extinction,

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African intellectuals and politicians would, in theory, vehemently dismiss the conceptual notions, mode of practice, and analytical powers associated with the discipline of anthropology. In practice, however, because they are trapped in the colonial educational paradigm, some would aggressively promote very few selected ideals constitutive to the world of the foreign anthropologist as a way of saving their own societies. Some of these ideals are not necessarily the most lucid or the most appropriate for the reconstitution of native societies. Most African intellectuals would, for example and in theory, try to argue that their cultures and societies are not primitive and backward, but, in practice, they would make it impossible for all those still hanging on to their native cultures to participate fully in modern civilization as a process of remodelling the society.

Broadly, there are two factors that have led to this situation. First, the old missionary practice of wanting to replace African traditional religion with Christianity through negative advertising of African religion and culture has presented African traditional religion as belief in spirits and the worship of ancestors; secondly, the old educational pedagogy, still very much in use, views Western science as intrinsically objective universal knowledge unmediated by any mythological tradition of thought and symbolization. According to Johan Galtung, Kwame Nkrumah, as president of Ghana, understood that Africa was not just colonized economically, but also culturally and scientifically. Hence, describing the struggle as depicted by a large painting, Galtung wrote:

The painting was enormous, and the main figure was Nkrumah himself, fighting, wrestling with the last chains of colonialism. The chains are yielding, there is thunder and lightning in the air, the earth is shaking. Out of all this, three small figures are fleeing, white men, pallid. One of them is the capitalist, he carries a briefcase. Another is the priest or missionary, he carries the Bible. The third, a lesser figure, carries a book entitled African Political System: he is the anthropologist, or social scientist in general. (Galtung 1967, 13)

For many years the decolonization process has focused on the political and the economic aspects and neglected the cultural and the scientific nature of colonization. Indeed, it is now extremely difficult to appropriately learn the language via which African indigenous religious and scientific knowledge, especially medical scientific knowledge, was initiated and developed. This is mainly so because, for African indigenous knowledge, art, religion, and cosmology did not exist as unique disciplines separate from the sciences of medicine or

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healing, but acted as the symbolic and abstract language via which one views and understands the world of matter and living elements. The scholar of African science no longer has the cultural paradigm of his own that is required to view and understand the indigenous knowledge system. Indeed, for the contemporary western educated African, the western scientific paradigm that he has acquired through education has become, as Bourdieu (1977) will describe, his reasoning and practical “habitus” with which he tries to understand and communicate his own indigenous knowledge. It is clear that the western scientific paradigm has become a big impediment. This impediment is reinforced by his false belief and notion that “true” scientific knowledge, particularly the science of nature and our environment, must follow the same scientific method and approach and that this method and approach is a naturally given rational method independent from any cultural construction. He is blinded by the centuries of western science propaganda which teach that its scientific method and approach are naturally given rational that are constructed from pure reason, without resorting to any religious and cosmological abstractions and specific cultural symbolization. I was a victim of this blindness until I started to involve myself positively with African indigenous scientists and to learn their language of abstraction and symbolization, particularly through the combination of religion, art, and medicine as a single discipline.

Hence the African conceptions of art, religion, and medicine, as outlined by such scholars as Mbiti (1969), Mulago (1973), and Kagame (1969, 1976), paradoxically reflect Christian conceptions about nature and often contrast the natural with the supernatural. These conceptions are most clearly expressed by studies in the ill-defined fields of “African Traditional Religion” and “African Cultural Studies.” Similarly, features used to outline the fields of study in both disciplines are often ill-defined. Studies in African traditional religion sometimes report that natural features such as hills, mountains, rivers, forests, etc. are conceived by Africans as sacred locations because of their relationships with the supernatural. The supernatural itself is considered to be a vast sacred realm, somewhere outside the domain of the natural, and populated by a myriad of ghosts, spirits, deities, nature spirits, ancestor spirits, and the like. Mythical, spiritual, and imaginary relations are then established between living beings of this world and these other beings through religious practice. In some cases, scholars report a proliferation of “spirits” of nature in almost every location and try to find in each exceptional natural object or location a corresponding spirit from the supernatural order.



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By bringing up this issue, it is certainly my intention to protest against the canons established in these fields of study. Indeed, I would like to state that, so far, the studies made in these fields have little bearing on my ethnographic approach to the analysis of religion, art, and medicines among the Dagara. Robin Horton (1993, 161-193) has shown how much the Christian cosmological model and Christian faith have patterned the study of African systems of thought. According to Horton:

For much of the past fifty years, the study of the indigenous religious heritage of Africa has been dominated by social or cultural anthropologists of Western origin and agnostic or atheistic religious views. In recent years, however, the dominance of this set has been challenged by new wave of scholars, some Western and others African, who repudiate the established approach to the field and advocate a radically different one. Some of these scholars, such as Evans-Pritchard and Victor Turner, have been anthropologists by formal professional affiliation. Others, like Idowu, Mbiti, Gaba and Harold Turner, have been affiliated to such disciplines as theology and comparative religion. Yet others, such as Winch, have been philosophers. They are united, however, by a methodological and theological framework which has been strongly influenced, first and foremost by their own Christian faith, but also by the long tradition of comparative studies of religion carried out by Christian theologians. (Horton 1993, 161)

Horton shows how the above mentioned scholars have used Judeo-Christian religious concepts to interpret African thought and asserts that notions such as God (Supreme Being), spirits, souls, spirits of the wild, and so on, are meaningful only to people who have spent years studying and practicing Judeo-Christian religions and to people who wish to have a translated version of African thought in Western Christianity. This, as Horton points out, is the scope of the work of John Mbiti (1969), but also of Vincent Mulago (1973) and Alexis Kagame (1969, 1976), who are not mentioned by Horton.

In my particular case, I have observed that the Dagara, within a short period of time, massively converted to Christianity. However, these conversions have not led to a complete Christianization of their cosmology. On the contrary, selected elements of Western Christian cosmology are continually being integrated into Dagara traditional cosmology as a way of dealing with current sociocultural changes. Christianity and modernization have not led the society away from their traditional methods of hoe-farming nor from their outlook on the cosmos as hoe-

farmers. Interviews conducted and activities observed both among Christians and non-converts indicate the existence of a common cosmology based on the same concepts of space and time. In other words, the cosmological order that ties in with the concepts of space and time is common to all Dagara. They view the ordering of the cosmos as a concrete process of ordering the environment in terms of locations, including farms, homesteads, village stead, the bush, hills, rivers etc., and of dealing concretely with atmospheric conditions as personified agencies. Through the process of personification, Dagara view both the physical and metaphysical dimensions of the environmental locations and atmospheric conditions by considering them figures and personified beings, with whom they share a common space. The figures and beings evoke human thought and are also seen as the metaphoric and alphabetic themes used in the development of scientific and cultural language. The common space in question is the constituted Dagara world, which they always visualize as a concrete, non-transcendental world. As Kwasi Wiredu (1996, 87) argues, “....a people can be highly metaphysical without employing transcendental concepts in their thinking, for not all meta-physics is transcendental metaphysics.” In other words, metaphysical concepts are usually embedded in such institutions and practices as the personified Earth (Téng) or Rain (Sàà)<sup>2</sup>, without necessarily conceptualizing them as transcendental, supernatural beings.

### **Need of an Indigenous Language and Thought Paradigm**

It would be wrong to argue that anthropology and other scientific disciplines have not been genuinely concerned with discovering indigenous modes of thought as demonstrated by local cultures. In spite of the blockades outlined above, certain genuine questions have been posed over the years and certain paths have been taken that led to certain results. For my purposes, I will focus my attention on two writers for two different reasons. The first is Claude Lévi-Strauss, and the second is Jack Goody. First, Lévi-Strauss appeared to me to have posed precisely the legitimate questions that are at the heart of the matter, namely, does the “primitive/savage” mind exist in a uniquely different way from the “scientific” mind, and what are its frames of thought? He also focused on the science of mythology, which I also happen to encounter a lot in my ethnographic field, as the gateway to discovering indigenous frames of thought within their own logic. In the second instance, Jack Goody and I share a common ethnographic field, the Dagara and their neighbors living in the border regions of three West African countries: Ghana, Burkina Faso, and La Côte d’Ivoire. Jack Goody does not only provide a very critical review of the works of Lévi-Strauss, but used the ethnographic data

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from Dagara culture to do so. In addition to the critical review, he has proposed through comparative analysis that the distinction between the primitive mind and that of the scientific mind is very much linked to differences in the means and tools of communication. It is the development of writing and the shift from oral culture to literate culture which is responsible for the development of the scientific mind. Let me briefly state my understanding of these two positions and explain how they have helped me deal with knowledge and thinking frames within indigenous cultures.<sup>3</sup>

As stated above, in anthropology, it was Lévi-Strauss (1962, 1966), to my knowledge, who first focused our attention on “primitive” models of thinking and developed a theoretical and a methodological paradigm to deal with human thought prior to what many will call the development of modern scientific thought. Lévi-Strauss began to develop his theory of structuralism in anthropology by questioning the universal historical and evolutionary concept of culture and human progress and stated through the analysis of kinship systems (Lévi-Strauss 1947), contrary to the dominant discourse of his time, that there are multiplicities of human cultures, each with its own encoded logic. This opening statement allowed him to shift the basis of culture theory from the size of the brain to mental operations as encoded logic (Lévi-Strauss 1947, 1958), and, finally, he developed the theory of structuralism as an alternative to that of cultural evolutionism. In essence, Lévi-Strauss argued that the human mind is constantly manipulating abstractions in thought forms in order to create conditions and practices. The abstractions finally settle in the mind as pre-figured or pre-coded mental structures. These figurations or codes show themselves concretely in different processes, like writing, classification, encoding, or other logical operations. The different processes, in turn, create structures as outlines of human conditions and practices. It is these structural outlines that appear as culture and account for cultural and racial differences. A structural study and analysis of culture concerns these structural outlines. Lévi-Strauss presented kinship structure as well as mythology as the perfect examples and models through which we can observe processes of abstractions and the creation of outlines. He also used the study of kinship and myths to show how structures differ from culture to culture.

To explain why these differences should exist and how it has come about that some cultures are more advanced or more scientific than others, Lévi-Strauss (1967) introduced other key concepts, such as the “bricoleur,” the “savage,” the “undomesticated mind,”<sup>4</sup> and “primitive thinking.” The “bricoleur” has to make do with limited and heterogeneous materials and tools to create and do his work. It is

with respect to this limitation that we can talk about the relative differences between the culturally “undomesticated mind” and the “domesticated mind.” Using the language of kinship and myths, Lévi-Strauss shows that the “undomesticated mind” applies a rather limited combinatory set of binary opposition, original to the process of abstraction and thinking, in a number of related and unsophisticated fields, like kinship, totemism, initiation, and healing, and what comes out as a complex structure is only a manipulation of the same limited concepts and fields. From an indirect implication, this is not the same as the “domesticated mind.” The “domesticated mind” is creating ever more complex new “tools” to embrace larger entities, to include a greater variety of data, and to integrate wider differences and interrelations. This is done according to the multiple logics of oppositions, homology, and congruence and in terms of space and time. The relationship between the two is summarized in Lévi-Strauss' (1966, 22) distinction between mythical and scientific thoughts. Thus, he writes that the:

....characteristic feature of mythical thought, as “bricolage” on the practical plane, is that it builds up structured sets, not directly with other structured sets but by using the remains and debris of events: in French “des debris et de morceaux” or odds and ends in English, fossilized evidence of the history of an individual or a society. The relation between the diachronic and the synchronic is therefore in a sense reversed. Mythical thought, that “bricoleur” builds up structures by fitting together events, or rather the remains of events, while science “in operation” simply by virtue of coming into being, creates its means and results in the form of events, thanks to the structures which it is constantly elaborating and which are its hypotheses and theories. (Lévi-Strauss 1966, 22)

Lévi-Strauss posited that all human pre-scientific thought in all cultures, and in the modern sense, developed at the same speed throughout human history up to and beyond the Neolithic Era when it stalled. Lévi-Strauss called this type of human mental structure, or frame, *La Pensée Sauvage* (The Savage Mind) and described its processing, to put it in simplistic terms, as a sort of “bricolage,” derived mainly from mythical reproduction and the unconscious mind.

In response to Lévi-Strauss, Jack Goody (1977) first insists that one must take a distance from the binary and ethnocentric forms of categorizations “rooted in a we/they division” of mental frames and thought. He then asserts that there is an evolutionary path in the development of technology necessary for the creation of advanced cultures. The most essential technology for the creation of rational and

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scientific thought, in his view, has been alphabetic writing as a tool of communication. Goody's material is heavy on global historical evidence and comparative literary analysis, much to the expense of the field material he collected from the Dagara people. The main issue that Goody focuses on was not so much on the indigenous frames of thought, but the differences between the devices of communication employed by the primitive mind and the scientific one; he calls this the "technology of the intellect." In this light, Goody asserts that in the order of the evolution and development of human thought "after language the next most important advance in this field lay in the reduction of speech to graphic forms, in the development of writing" (Goody 1977, 10). Accordingly, the development of writing does not only lead to a single significant leap but to a series of changes that will eventually lead to social and cultural revolutions in scientific thought, including the field of mathematics. Citing the Babylonian mathematics as a case in point, Goody asserts that the development of mathematics also depends on the prior development of a graphic system, though not necessarily an alphabetic one. Goody enumerates some of his practical experiences with the Dagara of northern Ghana to illustrate the relationship between writing and mathematics and the role graphic systems play in thought and to support his assertion that it is the lack of the graphic system which prevents the primitive or oral mind from thinking scientifically and mathematically. Hence, Goody states:

In 1970 I spent a short time revisiting the LoDagaa of Northern Ghana, whose main contact with literacy began with the opening of a primary school in Birifu in 1949. In investigating their mathematical operations, I found that while non-school boys were experts in counting a large number of cowries (shell money), a task they often performed more quickly and more accurately than I, they had little skill at multiplication. The idea of multiplication was not entirely lacking; they did think of four piles of five cowries as equalling twenty. But they had no ready-made table in their minds by which they could calculate more complex sums. The reason was simple, for the 'table' is essentially a written aid to 'oral' arithmetic. The contrast was even more true of subtraction and division; the former can be worked by oral means (though literates would certainly take to pencil and paper for more complex sums), the latter is basically a literate technique. (Goody 1977, 12)

I am not seeking in this article to demonstrate the validity of anthropological methods and theories developed in the past. I am only seeking to understand, through the study of the ethnographic material I have collected, the subject matter

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that this material is addressing, namely indigenous language of thought within the domains of religion, art, and medicine. My reference to these particular writings at this moment is to help me develop the path leading to the discovery of how thought frames and thinking processes developed by an indigenous society are produced and used. In that sense, the work of Lévi-Strauss is helpful to me only as far as it draws my attention to the possible existence of the “savage/undomesticated mind” and the “scientific/domesticated mind.” However, his evidence does not teach me that the two mental frames cannot co-exist at the same time within the individual brain and thinking faculties and within the socio-cultural level of the collective conscious and unconscious thoughts of a society or culture. There is just no evidence to even suggest that some individuals or societies and cultures are entirely living on the “bricolage” level of practical thought, while some others have acceded to a “scientific” level of creative thought. Goody’s critique and further suggestion, including many others who have over years made significant modifications to the ideas, makes it imperative for me to look beyond structural anthropology in order to further develop the science of indigenous thought beyond “bricolage.”

I take seriously the assertions made by Goody concerning this subject matter, the most significant of which is the focus on the devices of communication within thought, or, to use the appropriate term, “technology of the intellect,” the main one which makes the difference being the graphic system of writing, especially alphabetic writing. What I take from Goody’s work is that it is not just sufficient for the individual and the society to perfect the ways they know things through the use of language, reason, emotion, memory, etc. For this knowledge to develop to the scientific level, there is a need to put into place a graphic system via which thought can be captured as a body of knowledge and further documented into a systematic order and structure. This allows the individual author to distance himself or herself from the text, allowing the author and others to critically review it. In other words, the differences in knowledge and thought frames can be narrowed down to the scientific distinction between the oral cultures having no graphic systems as aids and the literate cultures, which have the written text or other graphic systems as scientific aids.

For the past twenty years, I have spent much time viewing the Dagara/Lobi culture and their systems of thought, particularly relating to their hoe farming system (Tengan 2000) and their *bagr* mythical narratives in the ritual context (Tengan 1999, 2006, 2012). From these studies, it is evident to me that graphic systems are very essential and remain the most efficient aids in the creation of a body of

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knowledge for the individual and the society, and might as well be the most efficient technology of the intellect for rapid social and cultural transformations for any civilization. That said, it seems I will be jumping to the conclusion that there is an absence of any type of graphic system in Dagara society without first trying hard to find one, and without looking at cultural systems with an open scientific mind in order to understand the intellectual technologies that the culture has developed as aids to general mathematical manipulations and as devices to be used for memory documentation and recall. I find the unspoken implication that, if no writing system that is capturing speech as language can be found in a society, that society does not have any other graphic system as technology of the intellect that will enable the creative mind to capture thoughts onto an external system in such a way that one can examine those thoughts from a distance to be unjustified. For the rest of the article, I shall use ethnographic material from Dagara religion, art, and medicine as a common area of knowledge to illustrate how the culture constructs and develops scientific language and thought into a body of knowledge.

### **Knowledge Frames, Graphic Models, and Thinking Processes: The Case of the Dagara**

The Dagara view and approach to both indigenous and scientific knowledge, particularly knowledge of health and healing, takes a holistic perspective against reductionism and analysis. It is based on the hypothesis that, first, the meaning and knowledge content of any object or element is multi-generic and specifically identifiable with the ecological and environmental context within which the object is located for observation and, secondly, that the knower or scientist, much as he or she might want to take a scientific distance from the object and the environment, is intimidated by the object and the location and is then absorbed into the meaningful context that he is trying to understand. In other words, the meaning given to the object and the environment includes his or her own understanding of the syntactic relationships between the object, the environment, and his own experience as a learner or a scientist. The basic thinking or knowledge framework via which he is aware of and is experiencing the immediate data before him is structured and colored by a specific cultural frame that was socially developed in the distant past, which he has inherited both consciously and unconsciously.

At this point, let me hasten to emphasize that the knowledge or thinking framework I am referring to here cannot be perceived as a static, hardwired frame that is successively transmitted over generations of users. Also, with regard to

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content and data, there is no divine received text or narrative that is being kept in memory and faithfully transmitted via trained experts through memorization and recall. African indigenous, and by extension scientific, knowledge, as I will argue and demonstrate, is characterized by generative and dynamic processing of data within an ever changing environment and context. In this article, I will focus on the notion of healing as a specimen of study within African science and contend that it is best observed when it is linked to other notions within religion and art. Indeed, my thesis is that, whereas African art exists as the appropriate scientific language and jargon in the field of healing religion, including ritual, constitutes its practice and praxes. In the rest of the article, I will discuss, through ethnographic description, the issue of art as language of scientific healing. I will then describe and outline how much religion becomes practice and praxes of healing and proceed to discuss the misuse of language and its resultant effect of scientific colonization within contemporary African society.

### **Dagara People and Society**

The people calling themselves Dagara today and whose family settlements are distributed in the northwest and southwest corners of northern Ghana and southern Burkina Faso are culturally very much akin to the people often referred to in literature as the “true Lobi” and are equally similar to the Dagaaba, with whom they traditionally share a close linguistic similarity. Beyond my earlier identification of these peoples in my former works, I will only stress here the similarities in cultural practices and reproductions that exist between these people in order to underscore why, for this study and in terms of ethnographic understanding, I am looking at them as one common social group. Indeed, the Dagara dialect is equally well understood by many of the “true Lobi” living in the Gaoua region, whose dialect is much more akin to Pwa. In the course of my research, I have used this dialect to communicate with the majority of the population, including members of the family settlement of Bindute Da, near Gaoua.

As itinerant hoe-farmers, the Dagara have been migrating and creating settlements in many parts of northern and southern Ghana, as well as in other areas in Burkina Faso and Côte d’Ivoire, and I have made it a point to get into contact with these people living both in the home region and in the Diaspora. My contacts with the different groups of Dagara and Lobi hoe-farmers, both in the Diaspora and the home regions, suggest to me that, beyond the linguistic variations, these groups, especially with respect to their art, religion, and medicine are relating to a common



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cosmological worldview and common forms of cultural practices. That being said, I do recognize that the nature of social change has not been uniform throughout the region.

The Dagara/Lobi people living in settlements around the urban center of Wa, as a group, have continued to resist the cultural infiltration of first Islam, and later colonialism, Christianity, and modernity for a long time. However, from time to time, individual families or a section of the extended family, for one reason or another, do decide to convert to Catholicism. Since the mass conversion of the Dagara populations living further north of Wa and stretching into southern Burkina Faso in the early 1930s, there has been greater pressure on the Dagara/Lobi living further south to convert as well. This pressure increased substantially in the 1970s when many Dagara families from the Nandom area of the then Lawra district who had already converted to Catholicism began to immigrate in large numbers into this area and the number of Dagara local clergy increased substantially to enable the church to send local priests with a much better understanding of Dagara language and culture to this region, thus making evangelization more effective. The increase in Catholic ritual activities and the rapid developmental processes taking place as a result of the missionary activities have continued to seduce even the Dagara Traditional Religious Leaders, some of whom have hitherto stuck to their healing cults, to want to convert to Catholicism. For the conversion and integration process of these leaders, the church puts on a show by conducting special rituals dedicated to the dismantling of the cultic institution and the removal of all the material objects associated with it.

In the past, the collected items were publicly set on fire and their burning was a sign that they did not have any spiritual power, as their original owners claimed. Some of the beautiful art objects were, however, sometimes retained by the missionaries and, with the coming of the local clergy, there is an ambivalent attitude toward setting these objects on fire. There is a greater tendency to store them away in an abandoned location within the parish house. This was the case with the two sets of archives that serve as the main ethnographic data of focus for my current study. Indeed, I first came to know of their existence through Fr. Linus Zan, who had served as the parish priest in the parish from which the artifacts had been collected. It was actually he who conducted the public Catholic ceremony to dismantle the cultic institution and to further conduct the rites integrating the then new convert into Catholicism. These items, after further study and investigation, do belong to two of the knowledge institutions alluded to above and were found in every Dagara homestead before the arrival of the missionaries. They are

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categorized as sacred objects (*tibε*) belonging to the ancestral and *bagr* cultic institutions of fertility, life transmission and sustenance, and socio-cultural relations. The aim of this article is not to focus on such items as part of thinking frames and knowledge models but to deal with the general issues regarding scientific knowledge and thinking processes.

### **Religion: Nature, Being, and Life**

Dagara religion and philosophy take root from their mythical reflections and historical experiences as migrating hoe-farmers. In essence, its centre of gravity is on the thought and perception that nature is the supreme divine entity, existing both as the concrete world of living beings and elements and as the transcendental supernatural realm of awe, fascination, and wonder. For generations, and in terms of religious practices, they have relied on four cultic institutions for knowledge and cultural production. These include the ancestral cult (*kpĩĩn*), the *kɔntɔn* cult, the *tibε* cult, and the *bagr* cult (Tengan 1999, 2000, 2006, 2012), including their mythical narratives, orations, and sacred rituals. Each of these cults exists separately within the family and house community and is specifically located in the house structure. According to the Dagara myth of origin, nature itself is auto-generic, consisting of two extending spatial domains, namely the space-above (*saa-zu*) and the space-below (*teng-zu*). The space-above, in human language, is figuratively and metaphorically described as an undivided, single extending entity and perceived to be one common house space society of beings and elements. The Rain, as a father figure, is the manifestation of the life-force embodied in the space-above and is in constant relationship with the Moon and the Sun as personified characters (Tengan 2000, 76-84). In contrast with the space-above, the space-below, consisting of the earth and its atmospheric surroundings, is further segmented into six proto-typical domains that are replicated into fragments and located randomly to cover the whole of the earth space. These include the arboreal/plant space, the hill space, the rock space, the atmospheric space of the wind, the sea/water space, and the atmospheric space of fire.

This mythical structure of the cosmic realm appears as the main socio-cultural syntax for understanding Dagara society and culture. In the first place, the society is a house-based social structure supported by a mythical ideology of kinship relations. As a non-centralized and non-hierarchical society, each house community is a de facto centre of gravity for socio-cultural activities, specifically relating to a particular institutional order. This is so because, by assigning a generic name to each house group and community through tracing patrilineal descent lines

and by associating a generic institutional foundation and practice also to each of the house communities, the system focuses on ensuring an egalitarian and distinctly individualized co-relationship among different communities and individuals on the basis of their common origination and specific institutional custodianship.

### **Society and Culture: The House and House Community**

The notions of the old house (*yir-kura*), also sometimes defined as the big house (*yir-kpee*), from which all individuals emigrate to constitute newer houses (*yir-paala*) or smaller houses (*yir-bili*), will at all times remain the centre of Dagara socio-cultural, religious, and political activities. The constitution of the old house or big house, and, for that matter, any of the sub-category of houses, is destined to put into place the most effective known processes that will ensure the survival, prosperity, and good health of each individual and the house community at large. As hoe-farmers who are in a very close relationship with nature and their constructed cosmic realm, it is important for each one and the community as whole, in order to stay in good health and to ensure survival and prosperity, to know the type of socio-cultural relationships they must have with nature, including all elements within nature and within each element, the life ingredients peculiar to that element. As all scholars studying Dagara society and culture have confirmed, the six most significant cultural and knowledge institutions via which the Dagara recreate and transmit their survival memory and tool-kit for reproduction of society, as alluded to above, remain the institutions of the ancestors (*kpiin*) and that of *bagr*, which are often grouped together; the institution of nature beings (*kɔntɔn*); and the institution of the cosmic beings (*gmwin-tibr*), including the two englobing institutions of earth (*téngan*) and the rain (*sàà*) shrines. In very general terms, we can distinguish between these four institutions by the way they deal with life. Hence, the *sãã-kpiin* and the *bagr* are focusing on life transmission through fertility and fertilization (*dɔglu*), the *kɔntɔn* focuses on knowledge of life sustenance, *bagr* focuses on knowledge of life aesthetics and public health, and *gmwin-tibr* focuses on the knowledge of individual life as substantive essence at the existential level. For all these institutions, the house building and community located as homesteads remain the central focus for all socio-cultural and material reproduction and practices, including the scientific reproduction of knowledge. Hence, for each house location, the founding male and female ancestors tend to

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compose four categories of cultic shrine institutions in different locations of the house in order to ensure the proper understanding and management of life transmission processes, life sustenance processes, life aesthetics, and life substantive essence.

In the homestead, each of these shrines may be located in a separate specific domain, except if the owner is a professional healer. Hence, the main ancestral shrine is located in a special room known as the “ancestral room” (*kpiin diê*), whereas that of *bagr* will be located on the terrace near to the neck of the main granary (Goody 1972; Tengan 2006). The *kɔntɔmɛ* are very diverse and can be located at several places in and outside of the homestead. The *tibr* shrine is the most sacred and is located in a specially chosen room that is consecrated and dedicated to it. All these categories of shrines and the purpose for which they have been set up tend to make the Dagara house a cultic temple, as well as a library and a museum for scientific research, experimentation, and learning, as well as an existing health center to cater for the total well-being of its members and the society at large. It is not possible in a single article to give a detailed study and analysis of the six areas of knowledge institutions just stated. Let me focus my attention on elaborating on the Dagara frames of thought as specific models within indigenous knowledge.

### **Thinking Frames from the Bagr Myth**

I shall base my elaboration on Dagara knowledge frames and thinking models on my many years of study of Dagara cosmology, mythology, and mythical narratives in *bagr* rites of initiation and their systems of thought regarding religion, art, and medicine. I also draw inspiration from their linguistic structure, speech analysis, and cultural practice of hoe-farming. Taking all these together and studying carefully their approach to ways of acquiring and transmitting knowledge, I have come to identify three knowledge frames and thinking models that together constitute their mode and method of reasoning. I have named these as: (1) framing the cosmos and house and thinking spatially, (2) framing gender and understanding objectified bodies, and (3) framing life and dealing with conscious awareness. It will not be possible for me here to give a detailed study on the theories and practices of these knowledge frames since that is not the main objective of study at this moment. I shall only generally table the symbolic and cultural phonemics used to construct the knowledge frames and broadly demonstrate their use as a scientific linguistic system.

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### Framing the Cosmos via the House and Thinking Spatially

The material used to build the house does not only have architectural properties, but, more importantly, it has art objects designed to evoke thought and meaning. Two of the rooms that are commonly found in any completed house are of particular significance for this. They include the long common room (*chaara*<sup>5</sup>), other smaller rooms similar to it, and the hut (*kampil*). The construction of the long common room consists of first erecting rectangular mud structures, secondly, inserting a wooden structure as a roof support, and thirdly, throwing gravelly mud on the top of the wooden structure as a roof and to create a terrace as a living space. The final stage is plastering all the walls and the floors, including the roof terrace, with gravel soil prepared with cow dung, the shells of the daw-daw fruit, and pounded stem of the okra plant. The erection of the wooden structure consists of selecting<sup>6</sup> a particular number of thick fork supporting beams (six to eighteen support beams) and half the number of equal thickness as crossing beams. Medium size crossing beams, a specific number corresponding to the number being used as main supporting beams, are then selected according to length and used to create the first layer of the roof and terrace. Small crossing beams are then used to cover the small spaces created by the crisscrossing of the different beams.

The thinking frame used in the construction of the long common room follows a vertical and horizontal scheme of reasoning. This is very much outlined in detail as part of the ritual narration of *bagr*. This detailed structure cannot be fully dealt with here, but let me point out the general process. The main part of the house is the wooden structure, which is constructed in such a way as to create the two cosmic realms, namely the space-above (*saazu*) and the space-below (*tengzu*), and to ensure vertical movements and interactions between them. The mud structure delimits the terraces and the rooms into irregular shapes and sizes and makes it possible for one to effect horizontal movements within the two realms. In all, the wooden and mud structures create vertical and horizontal spatial trajectories for the circulatory movement of living beings, including humans, and for the proper placement of handmade items and wares and the storage and preservation of household produce and goods.

The round hut is a room that often stands alone, either on the terrace of the long common room or near to the front yard or the backyard. Fork supporting beams should never be used as part of its architecture. Indeed, the round wall has no supporting wooden structure that is staked into the ground. The mud structure is built by tracing a circle onto the ground as a foundation and laying nine to twelve

rimed of mud walls on top of each other in a sequence of one rim per day until the last rim. The circular shape of the mud structure is significant in that the most common form of boundary limitations for all socio-cultural gatherings taking place in all open spaces has to be circular. This circular building is roofed with red savannah grass that is woven together. In putting up the thatch room, a selected number of wooden poles, appropriate in size and equal in thickness and in length, are used. These are first woven together on the erected mud-structure before layers of the woven grass thatch are put over it.

I shall further examine the thinking frames embedded in processes of building these two rooms and the uses of the spaces they provide.

### **Framing Gender and Thinking through Numbers and Shapes**

The use of gender as a frame of thought is common in all cultures, particularly in African cultures. Part of the *bagr* narration broadly outlines the way gender is viewed and framed. I shall start with this citation from the *bagr* narration. I shall then proceed to outline the whole frame and illustrate its mode of construction as a syntax coded with numbers and shapes.

<i>“Bvuno ir fu?”</i>	“What made you?”
<i>“A ηmin ir mε.”</i>	“Reasoning made me.” He answered. <sup>7</sup>
<i>“Bvuno o ko fu?”</i>	“What has it given you?” He asked again.
<i>“O bε ko mε bom wε.</i>	“It gave me nothing.
<i>Lerkpé ηma</i>	Except a blunt axe
<i>Lεb ηmānlé.</i>	And a calabash.
<i>Fu bε nyε tam,</i>	Here is also a bow,
<i>Langi zan,</i>	And the wrist guard,
<i>Lagni pélé,</i>	And the basket,
<i>Lagni laa,</i>	And the bowl,
<i>Lagni ηmān,</i>	And the calabash,
<i>Lagni yuor,</i>	And the water pot,
<i>Alε na o ko mε.”</i>	That is all.”
<i>Knt]nblé</i>	The young Konton
<i>Lεb yél ko ya:</i>	Then instructed him saying:
<i>“Fu na nyε zan</i>	“The wrist guard
<i>Lagni tam,</i>	And the bow,
<i>Lagni ler,</i>	And the axe,

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<i>Lagni suo;</i>	And the machete;
<i>Fu woa na?</i>	Have you heard?
<i>Dēb bomé na.</i>	Are masculine items.
<i>Ziduglé</i>	But the pot
<i>Lagn pélé,</i>	And the basket,
<i>Lagni laa,</i>	And the bowl,
<i>Lagni your;</i>	And the water jar;
<i>Pɔy bomé na.”</i>	They are feminine items.”
<i>Dé a aṇa</i>	So he handed over the male items
<i>Lēb ko dēb;</i>	To the man;
<i>Dé a aṇa</i>	And then gave the female items
<i>Mi ko p]π.”</i>	To the woman.”
<i>A aṇa so doo</i>	And this is the way
<i>A tiim mi bāng.</i>	We learn these things.

Whereas the spatial structuring of the house and the cosmos via the house building reflects a spatial frame of thought, the manner in which different beings and elements place objects and use the space is calibrated via gender frames of thought and number codes. The *bagr* narrative, part of which is cited above, explicitly outlines this frame and goes ahead to explicate its meaningful usage. Gender here is not framed as homology of oppositions and mediations but as, to put it in metaphoric terms, the needle (masculine gender) and thread (feminine gender) that are used to link iconic and symbolic items following cultural and linguistic rules and norms in order to create syntax of cultural thought. The notion of gender itself becomes clearly distinct from any of the objects, elements, or beings that are being syntactically linked.

Hence, using the gender frame, the culture will, for example, structure the proper use of space and locations in terms of placement of objects and living beings, including their movements, and also will properly define ways of identifying and describing these items in context via gender. In other words, the vertical and horizontal wooden and mud structures of the long common room, as described above, consist of cultural syntaxes linked together via gendering concepts. The most commonly used of these concepts have either numeric or shape/figure properties. Thus, according to Dagara cultural syntax, verticality, horizontality, and the number three have masculine gender properties and condition, whereas the round and circular shapes and the number four all have feminine gender properties

and conditions. It is important to stress here that items are being classified and categorized into cultural types and domains through thought of the concrete.

### **Framing Nature and Insightful Thinking through Riddles, Proverbs, and Descriptive Narratives**

In the *bagr* narration, the notion of the unborn being (*Bil*) tends to play a key role in the way life is framed and conceptualized. It is considered as the progenitor of all life forms and linked to the word seed (*bir*), the element in any life form allowing it to regenerate its own kind. The story of the unborn outlines a graduating order of life experiences as he is conceived, born, and grows in the home location and migrates away from the house into other locations, only to return as a grown up man that is bitten with all kinds of ills. The frame of thought outlined here is reflective and intuitive through focusing on both the transparent and hidden conditions and properties of selected environmental sites. These include the room location, the compost heap environment, the dry pond environment, the tree environment, the river environment, and the hill environment.

**Table 1: Knowledge and Thinking Frames from Nature**

Location	Request Made	Response	Reaction	Ending
Room	Do you have anything, so that when you die, it will be offered to you?	She finishes unpacking, and takes the smoked rat, and holds on to it. Then, she gives it to Unborn.	He [Unborn] eats hurriedly	
The Compost Heap	Have you any food? What can you do?"	The lady's leaves [panties] He strips them and Gives them to Unborn.	"Is that the only thing, That upon your death It will be offered to you?	He unearths a tadpole, and gives it to Unborn; And he eats it hurriedly.



Location	Request Made	Response	Reaction	Ending
The Pond	You have built a house; What do you even have Which upon your death Will be offered to you?"	Pond composes himself And takes the dry toad, And gives it to Unborn.	He eats it hurriedly	
The Shea Tree	Do you still owe anything? The pond is junior; But has some food."	Here is the shea fruit; She plucks that; And throws it to Unborn.	"Is that the only thing that you even have; Which, upon your death, it will be offered to you?"	The hanging rot, she plucks that and gives it to Unborn. He eats hurriedly.
The River	"Is that you, river? What an expanse! Under the elder tree. There is food. Besides your size; You are an elder; Yet I am seeing nothing."	The fish without fins, [River] takes only that To give to Unborn. [Fish] fights to be free And slips away at once.	"Do you see? Oh river! Is that the only thing You have on you That upon your death Will be offered to you? Consider carefully!"	The top water level, At its mystery level, At the sea mystery level, At the rain mystery level, To extract their oil And gives it to Unborn.
The Hill	Have you all considered? [Hill!] You are the senior And river is the junior; But it [river] has food.	Here! The python's horn, He decides to take that; For the sake of disorder, Reverses it back to front,	Is this the only thing That you even have?	He [hill] arises unwillingly And takes the bitter scorpion He gives it to Unborn.

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Location	Request Made	Response	Reaction	Ending
	So he approaches [hill].	And approaches Unborn.		

The thought frame itself consists first in framing and asking the appropriate questions at the different sites and ensuring that both the speaker and the interlocutor understand each other. The questions outline abstract thought frames and structures constructed using symbolic images, with the aim of giving reasons for human life and actions. The meaning of the term “reason,” as used here, includes statements about facts, real or alleged, employed to justify or condemn some act (social, cultural, and religious), prove or disprove, and approve or disapprove some assertion, idea, or belief<sup>8</sup>. There are different types of questions and responses associated with different stages of maturity and reasoning. Hence, the first level is associated with games of riddles linked to childhood reasoning. This type of reasoning is also associated with the personal and the collective unconscious and entails a specific correct answer to a particular question. Thus, the knowledge comes from the nest of the home, and the house community is represented here via the conversation between the unborn and the room environment (feminine gender) and the pond environment (male gender). I labeled this earlier as the “primordial mode of thought and reasoning” (Tengan 2006, 53). The second level of questions and responses are labelled as proverbial, which are more elaborate, both in terms of posing and answering the questions, and require a good deal of background cultural knowledge for the interpretation and understanding of the thinking behind the dialogue. Hence, in the narrative, the compost heap (male gender) situated in the front of the house, where male elders will often assemble to exchange ideas in the form of proverbs, and the shade of the Shea tree (female gender), where women go to gather fruits and nuts, figure as graphic frames of proverbial thought and captured speech. The third level, which I label as the descriptive thought frame, is associated with the river (female) and hill (male) locations and tend to configure observed facts and experiential conditions. The literary context comes in the form of the tale, the story and the narratives in ritual context, including myth, recitations, prayers, etc. It is not possible within the limits of an article to give a detailed study of these various levels of thought frames.

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## Conclusion

The developmental progress of African indigenous knowledge, whatever that might mean, has been trapped for a long time within the process of fragmentary disciplinary methods and theories on scientific knowledge and within a Judeo-Christian cultural frame of thought<sup>9</sup>. The historical conditions leading to the emergence of a particular paradigm of reductionism that underpins formal education and academic learning about African knowledge systems have further made it impossible to understand the knowledge, content, and practices of African sciences within their socio-cultural context. It has been the contention of this paper that it is not possible to study such seminal knowledge areas as religion, art, and medicine as if they were distinct and separate knowledge systems that accidentally cross each other in the minds of specialists without first understanding the cultural frames of thought within which they were constructed. Indeed, reading much of the literature on these three knowledge areas since the inception of Anthropology and African Studies as disciplines, the things they seem to have in common are the negative and derogatory terminologies that have been applied to them; religion, art, and medicine are considered to have no place in Judeo-Christian and Euro-American societies and cultures and have been thrown onto the African academic scene as a focus of study.

This paper has first tried to look beyond the negative and derogatory language used in regards to African knowledge systems and practices, particularly with regard to religion, art, and medicine. Secondly, it has argued that knowledge in art, religion, and medicine have a common objective, namely to ensure the proper understanding of the cyclical transmission and transfer of life within and across different life-forms or species. Different life-forms manifest themselves either as non-moving material objects/elements or moving embodied beings/elements. Using ethnographic material from the Lobi/Dagara people of northern Ghana, the paper demonstrates how the development of art in all its forms (material and performance) is also the development of a peculiar scientific language that is first used to intelligently reflect on and talk about the universe as observed and subsequently understand the meaning of its structure and purpose. This understanding leads to the development of thinking frames as models via which the Dagara people continue to further develop their indigenous knowledge systems.



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### Endnotes

<sup>1</sup> For most African societies and cultures, self and environmental awareness begins well before the birth of the infant both in the cosmic environment as the origin and source of life and the mother's womb where the physical formation of the individual takes place (See such notions as the Dagara concept of the Unborn (*Bil*) in Tengan 1999, 2006; Yoruba concept of Abiku (Ben Okri 1991). I shall explore this issue further when I come to focus of religion and art.

<sup>2</sup> Terms used as personal names for personified beings are not in italics. On the contrary, and throughout the text, I use capitals for their first letters to mark that they are proper names.

<sup>3</sup> My references to the works Levi-Strauss and Good are very selective and limited to my perception of the problem. The amount of work and the depth to which these two authors have treated the topics I refer to here are enormous and sometimes beyond my comprehension. I do not therefore claim to represent fully their views on these issues.

<sup>4</sup> The term 'primitive', meaning the original mode of mental operation is probably a better translation of what Lévi-Strauss is saying. Unfortunately, the term has become obnoxious and misleading in anthropological discourses and I should not use it. Undomesticated mind here refers to the basic and non-reflective mode of abstraction and thinking.

<sup>5</sup> The orthography of Dagara language, like many African languages, do not as yet have a common convention. The term 'kyaara' is sometimes used by Dagara linguists for what I have rendered here as 'chaara'. The correct phonetic pronunciation is very important to me and 'chaara' does not leave that in doubt.

<sup>6</sup> The criteria for the selection of any building material include the cultural classification and categorization of items according to gender and color codes. Hence, there are specific number of trees and animals which as classified as black while the rest are considered white and all tools and household objects are either masculine or feminine in gender (see Tengan 2000)

<sup>7</sup> The suggested meaning is that human being developed the tools listed below out of his own reasoning. Their classification, however, according to gender, is attributed to the intervention of Kɔntɔn.

<sup>8</sup> I have dealt with this frame as it specifically relates to the Black Bagr narration (see Tengan 2006:51ff). I will only give a brief outline of what it entails.

<sup>9</sup> I have not included Islam in this discussion because the Dagara people have roundly rejected Islam throughout the years and it will not be justified to draw a similar conclusion about Islam as I have made on the impact Judeo-Christian thought frames. There is also a school of thought out there which thinks that Islam has been cohabiting and adapting to Africa Traditional Religion in a way that Judeo-Christianity has not (see J. Kirby 1993).

