

Segmented Lineage and Straight Line in Modern Perspectives

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Abstract

The paper contains some field data from the Oraons and an attempt at the formalization of lineage relations. Starting with the title of the paper "The Elementary Approach on Segmentation of Lineage and Directed Straight Line segment: An Analogical perception of review study in Anthropology," the purpose of the study simply wants to draw an abstract parallel between lineage relations and mathematical relations. There are sporadic references to Western scholars, including Harary & White's "parental graph" and W.H.R. Rivers's "genealogical method." The study derives from "physics" and applies them to the anthropology of kinship for reasons that "Physics is the study of matter, energy and motion. Since everything in our world relates to these three basic subjects, physics can help understand many working system in the universe. All comes down to energy and matter.

Keywords: Segmented lineage; Straight line; Oraons; Genealogical method

Introduction

Analogy means the similar way of thinking on different subject. Let A same as B but A not equivalent to B. Segmentation of lineage sometimes is followed the rules of directed straight line but they are not equivalent to each other, because magnitude, line support are not cleared in this subject. Only direction has been found. We endeavourer to discuss the study with the opinion of Brown of lineage or Agnate in Social Anthropology is consisted of a man and all his descendents through males for determinate members of generations. Thus, a minimal lineage includes three generations, and we can have lineages four or five or N generations. He said further that "A lineage group consists of all members of a lineage who are alive, at a particular time. Now Clan "as such the term by Brown", is a group which, though not actually or demonstrably (by genealogies) a lineage, is regarded as being in some ways similar to lineage. It is actually consists of a number of actual lineage [1-7].

Technique to be used

According to Millar the goal of fieldwork is to collect information, or data, about, about the research topics. In cultural Anthropology, variations exist about what kind of data to emphasize and the best ways to collect data.(p-68,Ed-6th). In the opinion of Millar, a research method which is regulated with a research question or hypothesis, gathering data for constructing to the question, and then assessing the findings in relation to the original hypothesis. In the way when a research approach that is not followed by the hypothesis, involves gathering data through unstructured data, informal observation, conversation and other methods. For the present theoretical research can be satisfied by the several techniques.

Genealogical Method

People wish to know about our family history by tracing genealogies. Kottak [8-12] delineated that the genealogical method is a solid well established ethnographic technique. W. H. R. Rivers, who has been called 'the founder of the modern study of social organization', exerted an immense influence on his contemporaries and successors. This volume reprints three of his lectures, delivered in 1913 and first published in 1914, which provide a short and brilliant exposition of his theoretical approach, and are exemplary of his handling of ethnographic evidence. His theme is the relationship between kinship terminologies and social organization, more particularly forms of marriage, a subject still of lively theoretical interest. Also included is the same author's The Genealogical Method of Anthropological Enquiry, first published in 1910, a classic of anthropological methodology, and Professor Raymond Firth of the London School of Economics and Professor David Schneider of the University of Chicago provide commentaries estimating the past and present importance of Rivers in British and American Anthropology respectively.

Study Area

The present studies is carried out on Sardar Para, a hamlet of Village Dhalani, under the block Bagdha, 3 No Konira-1 Panchayet in North 24 Parganas, West Bengal.. The hamlet of the observing village is allegedly composed with homogenous people, belongs to the tribe oraon. Basically, agriculture is the main occupation. Needless to say, they have to work as agricultural labourers or day labourers. Though agriculture related work is their primary occupation but this type of occupation could not satisfied their necessities. For this reason they have to accept different secondary occupations as and when available from their society. They had been living since more than hundred years.. There are 134 Oraon families live here. All families are selected for the investigation. Dhalani is the midsized village located in the district of North 24 Parganas in the state of West Bengal in India [13-16].

It has a population of about 2799 persons living in around 578 families. At present there are 69 families studied. The total population is 282, out of them, 158 female and 124 male.

Family size

The investigation has announced that the Small family is seen 81.15%. The middle size family or medium family has placed after the Small family with 15.95% and last 2.9% i.e. large family. The following table has shown the detail picture.

Clan distribution

Several types of clan have found in this Hamlet or Sardar Para. These are namely Tirki, Toppo, Panna, Kerketa, Dhanua, Miz, Khalko etc. The following table shows the clan distribution in the respect of presently studied families as shown in the Table 1.

SL No	Clan	No of Family	%
1	Tiriki	33	47.14
2	Toppo	29	41.42
3	Panna	1	1.43
4	Kerketa	1	1.43
5	Dhanua	1	1.43
6	Miz	3	4.29
7	Khalko	1	1.43
8	Lakra	1	1.43
Total		70	100

Table 1: Clan wise Family Distribution.

Population wise clans distribution

It has found that 132, 115, 12, 04, 03, 04, 05, & 07 persons are belonged to clans Tirki, Toppo, Miz, Khalko, Panna, Kerketa, Dhanua & Lakra respectively [17-25]. The next table describes a detail account on Sex wise clan distribution as shown in the Table 2.

SI No	Clan Name	Male	Female	Total
1	Tirki	78	54	132
2	Toppo	63	52	115
3	Miz	6	6	12
4	Khalko	-	4	4
5	Panna	1	2	3
6	Kerketa	2	2	4
7	Dhanua	4	1	5
8	Lakrar	4	3	7
Total	8	158	124	282

Table 2: Clan and sex wise population

Theory (Types of unilineal descent)

Anthropologists recognize different types of kinship groups that are based on the unilineal principle. Categorized according to increasing level of inclusiveness, the four major types of descent groups are lineage, clan, phratries and moieties. Kinship refers to the relationship - found in all societies - that are based on blood or marriage. Those people to whom are related through birth or blood our consanguinal relatives; those to whom we are related through marriage are our affinal kin [26-31].

Preliminary concept of vector

Concept of directed line segment

Let 'L' be a straight line of indefinite lengths. Take two points A and B on L. Then portion of L, which is bounded by A and B is called a line segment AB or BA. Now let us direct this line by calling A, the initial point, and B, the terminal point. Then the segment becomes directed line segment (written as AB). Directed from A to B but if we take B as the initial point and A, the terminal point in then the line segment is directed from B to A, written BA, see that AB or BA is undirected line segment, but AB is a directed line from A to B with having direction as shown in the Figure 1.

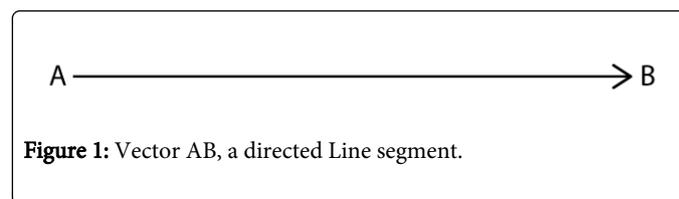


Figure 1: Vector AB, a directed Line segment.

In this study first a straight line is to be drawn from Generation- 1 to Generation -VII. Hence, generation -1, member no 1 is an apical ancestor or ancestral point i.e. initial point and generation VII-1(member) is denoted as terminal Point. Now, it has drawn for better understanding in next.

Analytic Geometry is a branch of mathematics which uses algebra and the co-ordinates system to solve Geometric problems. Hence, we started when Descartes [32-40] published his first book on the subject entitled "La Geometrie". He demonstrated that he could solve problems in geometry by using the processes of Algebra. He was the first one to use this method and has been called the father of Analytic Geometry.

Concept of undirected line segment

Given a line P determined by two direct point A and B as shown in the Figure 2. We denote the line segment as AB or BA. In general, a line segment is a set of points in between them.

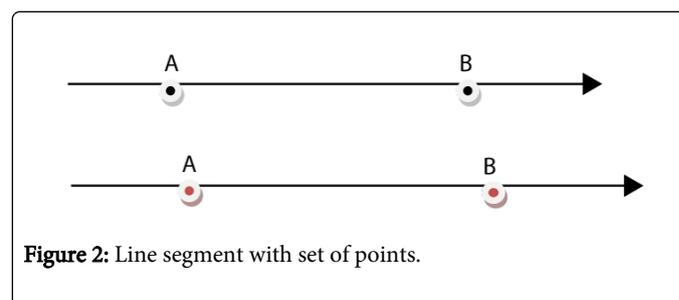


Figure 2: Line segment with set of points.

When a line segment is measured in a definite direction, the line segment is said to be directed. The direction is indicated by arrow head as shown in Figure 2. The distance between two distinct points on a directed line segment is called a directed distance. The symbol AB is used to denote the distance from A to B. If we designate the directed distance to positive, then BA is directed as negative, hence $AB = -BA$

If A, B, and C are three distinct on a line, the following relation holds as fun property of directed line segment.

$$R1 \dots \dots \dots AC = AB + BC$$

R1, is true regardless of the relative positions of the points on a directed line.

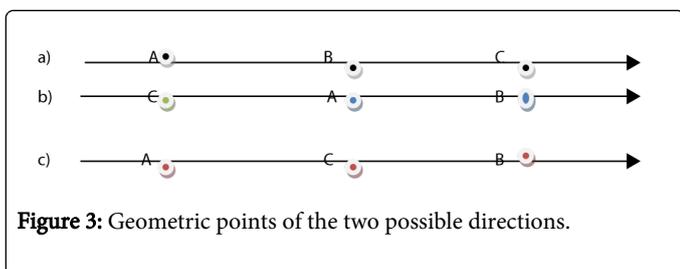


Figure 3: Geometric points of the two possible directions.

From the figure, we have

$$AB + BC = AC$$

Since from figure

$$CA = AC \text{ and } CB, \text{ we have, } AC + AB = BC, \text{ which give, } AC + AB = BC.$$

Geometric points may move along straight lines in one of the two possible directions as shown in the Figure 3 (e.g. East-West). A straight line with a chosen direction is called an axis; the chosen direction will be called positive, and the opposite direction will be negative. A direction is a common feature of the whole family of straight lines which are parallel with a given.

Sometimes, it is necessary to refer to a couple of opposite direction (e.g. East-West and West-east) as to mathematical object. This object is identifiable with a family of parallel straight lines. We will refer to it as an unmarked direction. if no special mention is made, all our directions will be marked.

The tangent of an angle which a line makes with positive direction of the X- axis is called the slope of the line as shown in the Figure 0034. It also called gradient of a line.

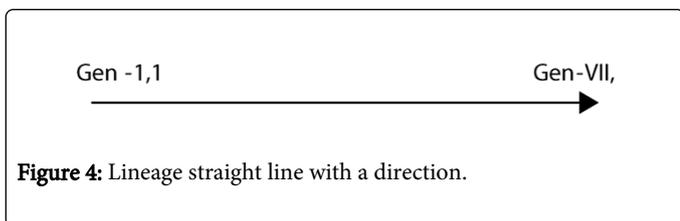


Figure 4: Lineage straight line with a direction.

If this straight line is drawn on the basis of kinship genealogy. It can be considered as to tell that the line has an unique direction from ancient to present and future. Now a lucid explanation of the following genealogy is discussed. Thus, It is important to mention that the properties of vector is not completely support for the concept.

Experiment-01

Let, the following genealogy is showing here which is taken from the study. The clan of the following lineage is Tirki of Oraon Tribe.

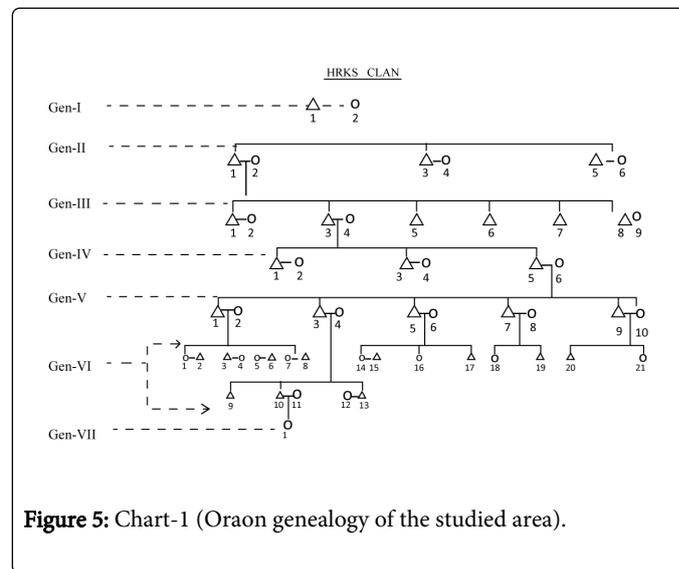


Figure 5: Chart-1 (Oraon genealogy of the studied area).

1. No of Total Generation = 07
2. No of Total Individuals = 54
3. No of Total Female = 26
4. No of Total Male = 28
5. No of Married Couple = 22
6. No unmarried Male = 06
7. No of Unmarried female = 04
8. No of Individuals achieved Titki Clan = 42
9. No of Individuals who lefts Titki Clan = 12

Chart-2 (description of genealogy).

The genealogy remarks the theoretical impression of Low of clan purity i.e

1. Females must have changed their Clan after marriage.
2. The same clan marriage is prohibited.
3. The clan is transmitted through the male line. The social or cultural traits like property, functions etc are all objects also inherited towards the male in generation wise.

Lineage both Patrilineal and matrilineal, exist implicitly in any kinship system, but it is only in some system that the solidarity of the lineage group is important feature in the social structure. So therefore, the actual lineage of prescribed genealogy, chart-1., is having the following members, listed below in the Table 3.

Gen No & living members	I		II		III		IV		V		VI	
	M	F	M	F	M	F	M	F	M	F	M	F
Individual No	-	-	-	-	-	--	5	-	1,3,5,7,9	2,4,6,8, 10	2,3,,9,10,17, 19, 20	4,11,16,18 ,21,
TOTAL Members	0	0	0	0	0	0	1	0	5	5	7	5

Table 3: living members.

Analysis

The lineage starts from Gen-I,1,2 to Gen-VII,1(chart-2). The members of the lineage are a) Gen-I, individual no.1 and 2, b) Gen-II, individual no. 1,2,3,4&5, c) Gen-III, individual No. 1, 2, 3, 4, 5, 6, 7, 8, 9 d) Gen-IV, individual no.1, 2, 3, 4, 5 & 6 e) Gen-V, individual No. 1, 2, 3, 4, 5, 6, 7, 8, 9 & 10 f) Gen..VI, individual no., 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21 and end Gen-VII, Only One Individual no.1. The actual lineage of the study is completely focused and members are noticed in Table 4. Only living male members and spouses with their son-wife and unmarried daughters are controlled by the same lineage rules. The transmission of several socio-cultural properties have always been observed in living members and in case of patrilineal lineage it is found in male line and in matrilineal female line. Thus actual lineage is a portrait of transmission legacy. Here it has been focused that the actual lineage resembles with directed line segment at a particular time.

Experiment-02

Now , at the beginning the Structural Model in Anthropology, Hage defined “ Anthropology is fundamentally the study of sets of social and cultural relations whose diversity and pervasiveness is illustrated by such terms as “exchange”, “hierarchy”, “classification”, “order”, “opposition”, “mediation” “inversion” and “transformation” (p-1). Parental relationships (arcs) have been studied by Harary and White in their P-System. This system somewhat help to present study , so we listed in below in the poinion of Haray and White to support the study at hand [41-48].

Through P-System analysis

A-P System is neither a graph nor a digraph, as it may have three types of nodes representing a single female , 0, a single male-1, or a reproducing couple, 01 as shown in the Table 4. It has however, only type of arc, as in ore’s genetic digraph. Furthermore P-system has two levels of nodes. Each node at level -1 in a p-system contains a graph at level-2 (Haray and White).

1	0-----0= Mother to daughter	code,
2	0---- 1 = Mother to son	code,
3	0---- 01 = Mother to married daughter husband	code,01=Married (female +Male)
4	0-----10 = Mother to married Son	code,10=Married(Male +female)

Table 4: P-System analysis.

Like that they illustrated 16 parental relationships. If we consider it on lineage system, wher we find, generation wise code 10 or code 01. In case of patrilineal it is 10 and in matrilineal 01.

Figure 5 consist, by the use of P-system of structural kinship (Harary and White), VII, same code as 10. That is male line, so it is assumed that the code of relationship made the line support analogically in lineage and which is found a directed straight line from initial to terminal position. There are following logical relationship found in a lineage.

Actual lineage

The actual lineage had been started from the Gen-Iv, individual no 5 to Gen-VII, individual No.01, because all members of these generations are presently living here. This is termed as minimal lineage. No minimal lineage is formed without maximum lineage. It is said that married couple and all male member and unmarried females belong to same lineage as shown in the Figure 6.

- A) 10--- 1 = male-female married couple to unmarried son
- B) 10--- 0 = male-female married couple to unmarried daughter.
- C) 10—10 = male female married couple to married son-wife.

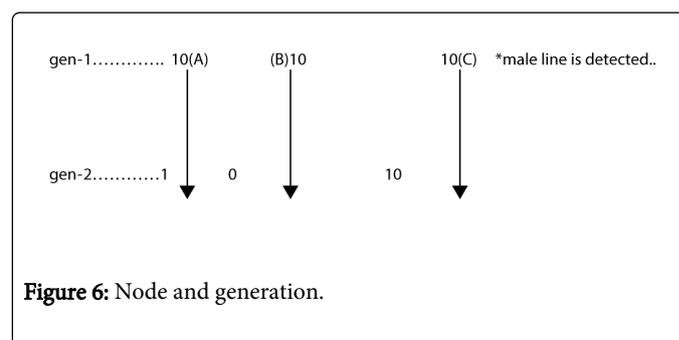


Figure 6: Node and generation.

Actual lineage

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P- System

According Harry and White, in a p-system there are three types of nodes: females (coded- 0) males (coded- 1), and couples (coded, 01 for female-male pair or 10 for a male-female pair, as convenient to simplify the diagram, or coded 2= {0,1} = {1,0} if the order of the pair

makes no differences). Conventionally, couples will be married, a relation of parentage may exist between any pair of nodes regardless of type giving sixteen possible combination of node joined by arcs. The following analogical P-system graph is drawn.

Now the following analogical graph shows the pattern of clan heritance from Gen-I to Gen-VII with member Gen-I,1 to Gen-VII, 1.. Hence every successive generation those are consisted with a number of apical ancestors which have remarked as parental stalk.

The parental stalk are marked with no of 1,1,4,5,6,7,8,9,10,11,12,13 and 14 (Figure 7). Through the parental stalks and by the male members, the clan system is transmitted. Here it is seen that an initial point and a terminal point are exclusively present and having a direction. Thus gen-1 is common ancestor which is represented as Initial Point and Gen-VII,01 is terminal point in a particular time and space.

In the discipline of P-System the Patilineal lineage inhabits the following possible character or arcs. These arcs might have supported the concept of directed line segment.

1. Father to son-(1-1)
2. Father to unmarried daughter (1-0), no longer
3. Father to married son with wife(1-10)
4. Mother to son (0-1)
5. Mother to married son with wife (0-10)
6. Mother to unmarried daughter (0-0)
7. father-mother to son (10-1)
8. Mother –father to son (01-1)
9. Father-Mother to married son with wife (10-10)
10. Father-mother to unmarried daughter (10-0) no longer
11. Mother –father to unmarried daughter (01-0) no longer.

Now the following chart shows the maximum and minimum Lineage of the study. Gen-1 to gen-VII is the maximum lineage and from generation –IV to Generation VII, minimum. Lineage. Let, Gen-1 represents Initial position and Gen-VII represent as terminal position. These positions are fixed but persons are changed as shown in the Figure 7 (the structural continuity).

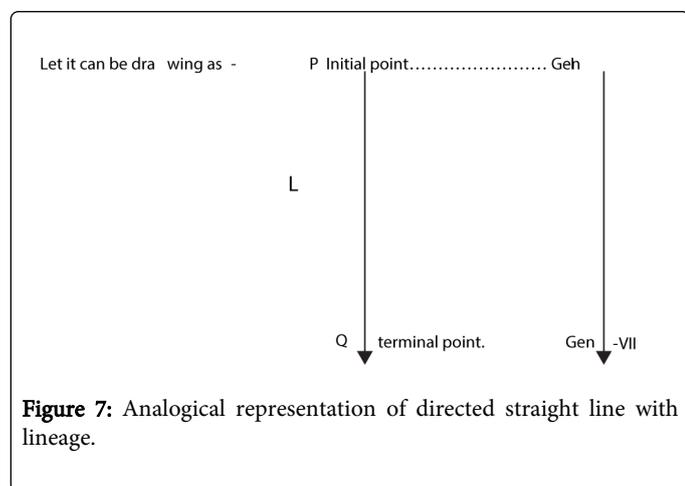


Figure 7: Analogical representation of directed straight line with lineage.

Let 'L' be a straight line of indefinite lengths. Take two points P and Q on L. Then portion of L, which is bounded by P and Q is called a line segment PQ or QP. Now let us direct this line by calling P, the initial point, and Q, the terminal point. Then the segment becomes directed line segment (written as PQ). Directed from P to Q but if we take Q as the initial point and P, the terminal point in then the line segment is directed from Q to P, written QP, see that PQ or QP is undirected line segment, but AB is a directed line from P to Q. With PQ directed line segment PQ line attributes 'three' characteristics as shown in the Figure 8.

Let, likes Figure 8, we get from the analogical P- graph, N-numbers of directed line segments,

Example;

- 1) Gen-I, 1 to Gen-II, 2
- 2) Gen-II,2 to Gen-III,3
- 3) Gen-III,3 to Gen-IV,4
- 4) Gen-IV,4 to Gen-V, 5,6,7,8,9,10

And so on.....

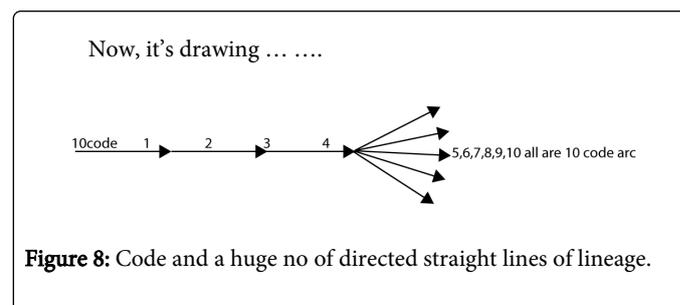


Figure 8: Code and a huge no of directed straight lines of lineage.

Those oraons who are living here practiced eight successive clans. The clans are sib or lineage pattern in nature. The clans are also exogamy. Analogically they represent the similar line support. No marriage is found in the same clan. Therefore, each segment of lineage is parallel in nature and generation to generation. At the same time, the member of the two different sib or clan or lineage can choose their spouses. The following diagrams show the fact. On this occasion (clan Rules), every lineages make parallel lines.

This is extremely thin and at this level has been done or said 10,000s of times in Ethnographies. The data here I take it are clans described in Dalton 1872. The oraons, Descriptive Ethnology of Bengal. Who studies these clans in 1972? Publishing a century before that it cannot be him.

Social Organisation

Clan

The tribe is divided into number of exogamous totemic clans (gotra). A clan again subdivided into a number of maximal lineages which are further subdivided into a number of major lineages which are structured of ultimate social unit's viz. families. According Dalton the oraons are divided into tribes, the family or tribal names are usually those animals or plants, and when this is the case, the flesh of some part of the animal or fruit of the tree is tabooed to the tribe called after it. The study area is contained the same values. Today they are practiced the same. In reference to Dalton, study on oraon in 1972,

there the clans which were presented by him today those are also present in the study. Hundreds years the totemic clans likes Tirki, Lakra & kirpotas etc. are transmitted through the male line. That means it was traveled from Gen-1 to Gen-VII. The following Figure 9 shows the nature of new approach.

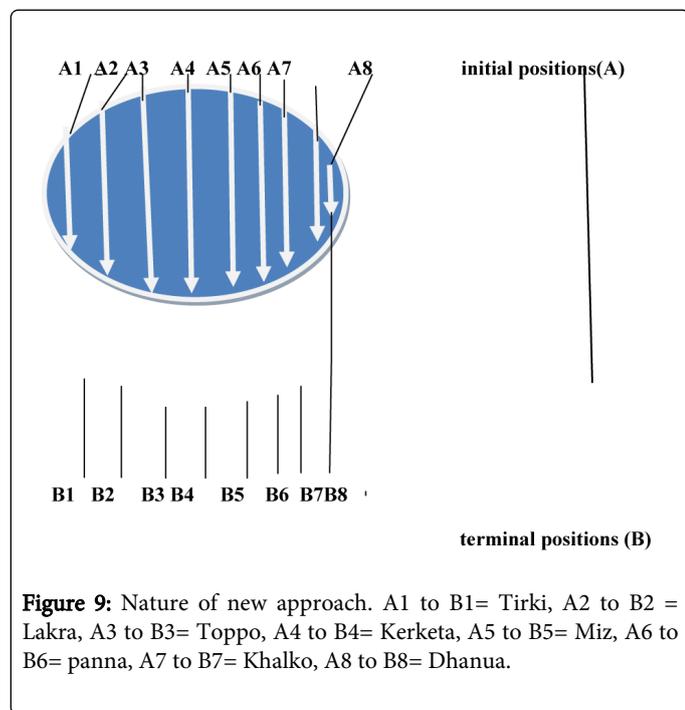
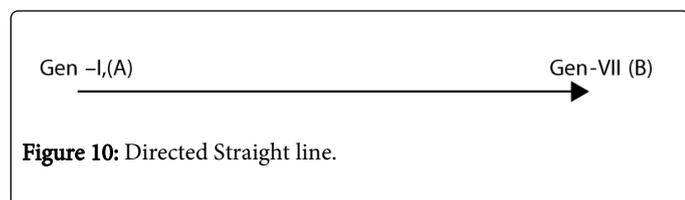


Figure 9: Nature of new approach. A1 to B1= Tirki, A2 to B2 = Lakra, A3 to B3= Toppo, A4 to B4= Kerketa, A5 to B5= Miz, A6 to B6= panna, A7 to B7= Khalko, A8 to B8= Dhanua.

The clans are inherited from A to B (Gen-I to Gen-II). A is the initial stage and B is terminal point and it has direction through the male line. The point A & B is coded with 10. Thus, it is observed that a straight directed line can be measured. All members of the lineage practiced the same taboo and social sanctions. At the same time it contains time and space. The terminal position “B” (present time) will be continued after marriage and will be represented as initial point like A in future. The result is that” time” controlled the nature of terminal point.

The study represents that A is connected with Gen-I and B is connected With Gen-VII. Now I further represent it as the following Figure 10.



The oraons follows the characters through the above mentioned figure.

- The members are not allowed to marry outside but are always expected to marry within the group.
- The division has been perfectly observed here. Maximum and Minmal lineages have been recorded
- Same clan marriage is not followed today.

- To the study it is seen that totems are not worshiped. Descent is patrilineal as the clan name passes from father to son. Each clan is strictly exogamous.

Descent and inheritance

The oraons are patrilineal. A man belongs to the clan of his father and a woman, after marriage, gets into her husband’s clan. Supreme authority of family even today vested on a male member (patripotestal).

Let, a male member of A clan is not getting off wife from the clan A. He can take women from Clan B.

A↔B, in case of Marriage relationship and wife can take husbands clan.

$$\begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix} \quad (1)$$

The above matrix is common for the both exogamous clans on the basis of marriage alliance and clan transmission. Hence I postulated that P-system of code ethics of Harary. In a Clan Male gets wives from Clan B and the code is male (1)-female (0), i.e.10. Again female member of A clan married by male of B clan. The women get clan name to husband’s clan. Here the code is female-male, i.e. 01. That means female (o) must be regulated the inheritance pattern of male line, so therefore we can represent the identity matrices. Like (1), That is why I agreed that directed straight line is maintained through code 1-1. So the patriline age quiet some appeared as a directed straight line.

Conclusion

The present study is a hypothetical analogical perception of lineage. Thus it has been studied under the full consideration of analogical experience. The lineage pattern has been found in consisting with two types, i.e. Patrilineal and matrilineal. These are the linear pattern of inheritance. The actual lineage is consisting of living members, in a particular time and space. Genealogy represents a complete structure of lineage-space and a directed line segments in a particular indigenous community. The present study re-examined that every lineage or segment or clan is transmitted through married couple to the next. The couple or family of procreation is denoted as parental stalk and as well as an apical ancestor. While males and unmarried womens are belonged to same lineage from their parental stalk, that is termed as Patrilineal and opposite as matrilineal. During investigation it has been found a huge no of parental stalk is present in every lineage. In fig: that Gen-I, 01, Gen-II,1. If it is tracing from early to present situation on genealogy where a straight line may be originated which consists an initial position and terminal position, having a direction. At same time on this straight line where” every parental stalk, we get, N-numbers of segmented straight lines which have same direction. So every fragmented but linking part of a lineage’s straight lines equipped the similar characterization of directed line. Through this pathway, the present paper resembles that the lineage or sib is evolved as under the discipline of directed straight line. In response to social system,, the lineage is analogically reviewed as Directed straight line resembles with same sense and direction. Here “sense” means unidirectional and “support” is clan practicing The paper endeavors that analogical perception of directed line segment of the vector and scalar quantities is quite resembles with lineage system although the magnitude and others characters is not studied.

Research Result and Objectives

It is true that the paper has not been composed enough effort. I am willing to show just the elementary approaches on this matter. I have tried to show in this paper that lineage sometimes controlled by the nature of directed line segment. Because every successive generation both patrilineal or matrilineal society followed the one line formula, i.e., Male line and female line. Again we know that directed line is a part of vector or scalar properties. But a vector must be followed primarily the following a characters.

These are.....1) magnitude d, 2) line support 3) direction etc.

But hence only direction has been occurred. Thus I have made the paper under the logic of direction only. Here I would not desire to take it under the concept of vector. That is why I used the term "directed line segment". If we consider the world as magnetic field then may we reach the magnetic value of human interaction? This is a very a debatable conclusion. So it is better to use the term directed line segment. Next which is transmitted in generation? In anthropological literature it is proposed that the cultural properties like, wealth, land, skill. Knowledge etc.. Actually these are all the elements of energy. I can say various part of energy like static, sound etc.

The paper shows the overview of cultural solidarity or structural continuity. Let, every indigenous people living in the world consists of branches of lineages. Every lineage has a direction with line support. Line support signified there values, customs and various cultural traits. So lineage is a directed line segment and it has controlled the cultural similarities or solidarity. The study contributed that lineage is an directed line segment when it is seen in male than it is signified by the term Patrilineage and when it is found in female, it is known as matriline ages.

Research Significance

The study focuses that the lineage system sometimes shows quite similar character with the directed line segment. Although directed line segment is a major part of Vector & Scalar properties but segment of lineage only possesses the direction from that discipline. So we have signified that every lineage might be analyzed as a directed line segment with its nature of direction. The study does not observe the magnitude, Sense & support, but hypothetically is assumed that "sense" & "support" may performed through the rules of unidirectional and clan practicing under the cultural system in human society.

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