



Durham E-Theses

Theoretical Marxist approaches in palaeodemography aspects of three Greek regions

Papaioannou-Stathaki, Fotini

How to cite:

Papaioannou-Stathaki, Fotini (1988) *Theoretical Marxist approaches in palaeodemography aspects of three Greek regions*, Durham theses, Durham University. Available at Durham E-Theses Online: <http://etheses.dur.ac.uk/6667/>

Use policy

The full-text may be used and/or reproduced, and given to third parties in any format or medium, without prior permission or charge, for personal research or study, educational, or not-for-profit purposes provided that:

- a full bibliographic reference is made to the original source
- a [link](#) is made to the metadata record in Durham E-Theses
- the full-text is not changed in any way

The full-text must not be sold in any format or medium without the formal permission of the copyright holders.

Please consult the [full Durham E-Theses policy](#) for further details.

Academic Support Office, Durham University, University Office, Old Elvet, Durham DH1 3HP
e-mail: e-theses.admin@dur.ac.uk Tel: +44 0191 334 6107
<http://etheses.dur.ac.uk>

563

The copyright of this thesis rests with the author.
No quotation from it should be published without
his prior written consent and information derived
from it should be acknowledged.

THEORETICAL MARXIST APPROACHES IN PALAEODEMOGRAPHY
ASPECTS OF THREE GREEK REGIONS

vol. 1

by

FOTINI PAPAIOANNOU-STATHAKI

A THESIS SUBMITTED FOR THE DEGREE
OF DOCTOR OF PHILOSOPHY IN THE
DEPARTMENT OF ANTHROPOLOGY,
UNIVERSITY OF DURHAM.

April
1988



- 2 NOV 1989

Dedicated to Eugene, my mother
who did not live to see me
finish this work

and

to Thanos, my father who continued
to give me unfailing support in
so many ways.

ABSTRACT

The question of the nature of human activity, its specific formulation and function in social production and reproduction is a fundamental one for any theory of social formation, existence and evolution.

There are various forces to account for which do not remain static as they are categories of human needs and consciousness and they are transformed as society changes. Nonetheless theoretical pre-suppositions in general have rested on the validity of rigid argumentations embedded in a tradition of conservative ideology, with their central feature the a priori reduction of population dynamics and social values to eternal natural laws. In this "Hobbesian society" concepts, categories and methods are the products of the very phenomena they are designed to describe; the effect is empirical closure, artificial separation of the object from its history, and the application in any field of the "true or false" hypotheses, which once categorized remain ever so,

However, an understanding of the reality depends on the question we ask. Rather than seeking comparabilities in statistical terms and countings according to some unstated value scheme considered as proven, the Marxist commitment is to detailed study of societies, with written or non-written history, based on the dialectical-historical analysis of relationships and contradictions that must be elaborated, refined and tested both through theory and praxis; and this is the concern of the following thesis.

ACKNOWLEDGEMENTS

Without the help of my family - Alexander my son, George my husband - and close friends it would have been difficult for me to have completed this work.

My thanks go to the staff of the archaeological museums of Ioannine, Volos and Olympia, my colleagues Mr. Il. Andreou and Mrs. I. Andreou (Ioannina Museum), Professor G. Chourmouziadis (University of Thessaloniki), the secretarial staff of the Anthropology Department - Durham, Professor E. Sunderland, Mrs. R. Hart, Mrs. J. Oxley for typing the thesis, Mr. A. Reid for drawing the graphs. Also, M. Alexander of the Quaternary Research Department - Durham. Dr. D. Stow, Department of Geology - Nottingham for laboratory facilities on soil analyses, accompanied with further suggestions of a most helpful kind, and to M. Kritsotaxis for detailed information and remarks concerning theories on the geological evolution of the Greek region.

Special thanks finally to Dr. W.R. Williams for his invaluable assistance and useful suggestions with the computing. Dr. M.T. Smith has accompanied this effort throughout with encouragement and constructive discussions.

TABLE OF CONTENTS

	Page
Abstract	i
Acknowledgements	ii
List of Figures	v
List of Tables	ix
Introduction	1
Chapter 1	
Demography and the Significance of Historical Explanation	
1.1 The Interdependence of Man and Nature	13
1.2 The Historical Dialectics of Society and Nature	18
1.3 Matter, Labour - Content and Form	26
1.4 Labour Hierarchy of Functions	31
1.5 The Individual in Society: Knowledge and Value	39
1.6 Material Production as the Basis of Social Life	47
1.7 "Industrial" Relations in Prehistory (Labour begins with the Making of Tools)	61
1.8 Unity and Diversity of the Historical Process	72
1.9 Ethnographic Interpretations - Possibilities and Reality	76
1.10 Historical Materialism and the Dynamics of Primitive Society	88
1.11 Summary	103
1.12 Notes and References	111

	Page
Chapter 2	
Demography and Population	
2.1	135
2.2	142
2.3	159
2.4	182
2.5	194
2.6	197
Chapter 3	
Demography and Settlement	
3.1	211
3.2	227
3.3	247
3.4	262
3.5	270
3.6	274
Chapter 4	
Demography and Economy	
4.1	282
4.2	305
4.3	315
4.4	340
4.5	355
4.6	360

	Page
Chapter 5	
Demography and Culture	
5.1	The Social Structuring of the Cultural Concept 382
5.2	The Quality of Culture 401
5.3	What is a Palaeolithic Culture (Society without History or Society in History?) 412
5.4	The Cultural Context of Demography 433
5.5	Summary 445
5.6	Notes and References 454
Chapter 6	
The Essence of the Evidence	
6.1	"Real" Objects: Appearance and Displacement 465
6.2	Technology "matters" 469
6.3	Evidence and Evaluation: on three Greek Regions 478
6.4	The Approach to Population: not one-dimensional pattern but underlying relationships 486
6.5	Summary 495
6.6	Notes and References
	Summary and Conclusions 539
	Bibliography 554
<u>List of Figures</u>	
1.1	A diagram to show the different modes of production and their interaction within each. 32
1.2	A representation of how production operates under "any" technological system 35

		Page
1.3	Series of diagrams (1-7) to show the effect and interaction of economy in general (tools, production and population) in a society.	40,41
1.4	A model of social reproduction.	50
1.5(a)	A diagram (a) to show production for use and exchange.	56
(b)	The two aspects of commodity use-value and exchange value.	57
1.6	A diagram to show industry and its environment (for any given period).	68
1.7	Factors that can be modified by man and their interrelationships.	77
1.8	A simple representation of the modern world system.	102
2.1	Relations between demography, ecology, biology and sociocultural systems.	150
2.2	A curve showing the estimated growth of the human population from 1.50 m.y ago to the present.	154
2.3	Survivorship zone of ancient mortality.	171
2.4	Probability of death at various ages of ancient man (both sexes)	172
2.5	Population growth, fertility-mortality rates.	173
2.6(a)	Transformation of the mode of life related to socio-economic and population structure.	185
2.6(b)	A diagram to show the development of a historical model with external-internal factors influencing a society.	186
3.1	A diagrammatic representation of the relationships between percepts, concepts and terms.	214

	Page	
3.2	A diagram to show how two rather different languages may be developed within the same context.	216
3.3	The measure of distance for classifying in a two-dimensional orthogonal space.	231
3.4	Diagrams to illustrate types of spatial distributions.	232
3.5	Types of spatial point sampling.	233
3.6	Weber's optimal locational model.	236
3.7	Clustered, random and perfectly uniform distributions, within a space.	239
3.8	Comparative relationships within a space.	241
3.9	The Construction of a factorial sampling design for random sampling in population affected by multiple interactions.	249
3.10	The effect of imposing a boundary zone/s on a study area.	255
4.1	A rough model of "decision"	286
4.2	The processes of exchange under simple commodity production (SCP) and capitalism (C)	287,288
4.3	A simplified way of the process of capitalist reproduction.	290,291
4.4	Samuelson's solution to the basic economic problems of what to produce, how and to whom.	302
4.5	A model for the development of regional centres.	316
4.6	Settlement patterns associated with an increasing localized resource.	317
4.7	The different views of inter-system relations.	332
4.8	Diagrams to show the kinds of relations that may exist between the elements within a system.	333
4.9	A diagram to show entities and change into a system.	338

	Page	
4.10	Procedures involved with the structure of a "palaeoeconomic" system.	354
6.1	A graphical representation of the frequencies of the individual areas (Rawm, Comp, Teccat)	519
6.2	A graphical representation of the frequencies of the individual areas (Pres, Pati, Cortex)	520
6.3	A graphical representation of the frequencies of the individual areas (Bulb, Butt, Retouch)	521
6.4	A graphical representation of the frequencies of the individual areas (Rel. Ret type, Form)	522
6.5	Map of Epirus showing locations of the sites.	523
6.6	Map of Thessaly showing locations of the sites.	524
6.7	Map of Elis showing locations of the sites.	525
6.8	Non-metric multi-dimensional scaling.	526
6.9	Maximum link clustering.	527
6.10	Index of relative importance of variables by area (Rawm, Teccat, Comp, Pres, Pati)	529
6.11	Index of relative importance of variables by area (Cortex, Bulb, Butt, Retouch, Form)	530
6.12	Inter-site variation within areas.	534
6.13	Length, width, thickness by area by Teccat, Rawm, Form.	537
6.14	Length, width, thickness by area by Teccat, Rawm, Form.	538

List of Tables

1	A typology of modes of production.	89
2	Population types for the study of change.	160
3	Life expectancy from various periods in human history.	163
4	Ancient expectation of life (both sexes)	164

	Page	
5	Comparison of percentage age distribution of Palaeolithic and Mesolithic series	165
6	A comparison of distribution of death from the age of 12.	166
7	Distribution by age and death of Neanderthal, Upper Palaeolithic and Mesolithic men.	167
8	Sex differences in ancient expectation of life.	168
9	A tabulation of the "principal instances" of the three-fold segmentation of culture, and its employment.	387,388
10	Differential emphasis on definitions of culture.	389
11	Rank order of conceptual elements of culture entering into definitions of pre-1940 and 1941-50 periods.	390
12	Raw Frequencies - Thessaly and Elis	505
13	Variable Code.	506,507
14	Distribution counts of RAWM by site	508
15	Distribution counts of TRCCAT by site	509
16	Distribution counts of COMP by site	510
17	Distribution count of PATI by site	511
18	Distribution counts of Cortex by site	512
19	Distribution counts of Bulb by site	513
20	Distribution counts of Butt by site	514
21	Distribution counts of Retouch by site	515
22	Distribution counts of Rel by site	516
23	Distribution counts of RFTTYPE by site	517
24	Distribution counts of FORM by site	518
25	Metrix of Edwards sq.	528
26	Criterion, variable length, width, thickness broken down by region	531
27	Criterion variable length, width, thickness broken down by site	532

		Page
28	Correlations Length, width, thickness by Area	533
29	The relationships (Chi sq.) between variables over regions	535
30	Relationship of the variables (Chi sq.) between regions	536

INTRODUCTION

Anthropology, however it is defined, is enmeshed in the particular social structure and economy to which it belongs in a highly complex kind of way: it can hardly be discussed in isolation. Even the most abstract theoretical discourses and scientific endeavours are the products of particular societies in a particular historical period. Even the most concrete empirical investigations at any level of information or analysis are subject to particular constitutional forms and traditions and are, therefore, part of particular historical, economic, political and ideological conjunctures. Because human beings live in societies and because these societies have a temporal dimension, the products of the human mind always have a social and historical determinant.

Anthropology has traditionally studied the relations of human kind to nature and the relations within society, the original conditions of the human being, its material, mental or artistic expression. In that sense it is closely connected with archaeology. Anthropology is founded on the supposition of the structure of human populations, the differences between them and the varieties in the development, existence and composition of each, and in that sense is related to demography. Human populations tend to have distinctive features and trends in their productive and reproductive activities - both as activities in society and as a specific discourse in society - that is, methods and decisions concerning these processes - and in that sense anthropology is connected with economy.



INTRODUCTION

Anthropology, however it is defined, is enmeshed in the particular social structure and economy to which it belongs in a highly complex kind of way: it can hardly be discussed in isolation. Even the most abstract theoretical discourses and scientific endeavours are the products of particular societies in a particular historical period. Even the most concrete empirical investigations at any level of information or analysis are subject to particular constitutional forms and traditions and are, therefore, part of particular historical, economic, political and ideological conjunctures. Because human beings live in societies and because these societies have a temporal dimension, the products of the human mind always have a social and historical determinant.

Anthropology has traditionally studied the relations of human kind of nature and the relations within society, the original condition of the human being, its material, mental or artistic expression. In that sense it is closely connected with archaeology. Anthropology is founded on the supposition of the structuring of human populations, the differences between them and the varieties in the development, existence and composition of each, and in that sense is related to demography. Human populations tend to have distinctive features and trends in their productive and reproductive activities - both as activities in society and as a specific discourse in society - that is methods and decisions concerning these processes - and in that sense anthropology is connected with economy.



Anthropology is a social science which has only recently separated itself from a conservative natural-science view of humanity which had given birth to a variety of racism, the reduction of cultural differences to natural or innate differences and the assignment of these to a scale of higher or lower races. The theorists of this anthropology argued that principles of population should be seen as related to, and determined by, the laws of social organization in general, which should themselves be studied by the methods of natural sciences. The consequence was the claim to have established universal, iron laws, invariant abstractions of human nature in the name of objective science; palaeodemography and prehistoric archaeology remained faithful to this tradition, of a homogeneous space of facts and phenomena grouped together under typological classifications, naturalistic constructions and pre-fixed patterns of a given ideology. This empiricist ideology which, with few exceptions, dominates every variety of history, lives in the illusion that it can do without theory in the strong sense, without a theory of its objects; what seems to take the place of that theory is the methodology and the rules that govern its effective practices. It is not paradoxical then, that the Marxist conception of society has been neglected and a dialectical materialist interpretation of history was scarcely if at all realized.

Marx and Engels worked on the construction of a systematic theory, with inter-related concepts, designed to formulate new patterns of determination. In contrast to a concern with unique events or institutions, the central concepts of historical materialism,

such as forces and relations of production, are not formed by the 'one-sided accentuation of one or more points of view' and by the synthesis of a great many diffuse, discrete, more or less present individual phenomena; their function is not to constitute ideal limiting concepts with which the real situation or action is explained. In this respect the concept construction of historical materialism is outside the empiricist problematic, in which concepts are abstracted out of reality, either as accentuated ideals or as averages, instead of produced through theoretical work.

It is now more than twenty years since the French discussion among Marxists on the nature of society traditionally studied by anthropologists and more than thirty years ^{since} Childe's attempt to explain archaeological evidence in Marxist terms. The latter's view not only failed to exert any significant impact on archaeological reasoning and research, but his attempt has been used by archaeologists to show the failure of the historical materialistic theory. Although this rather demonstrated the failure of the different authors to distinguish and/or relate theory science and evidence, it undoubtedly reflected a general and widespread trend among archaeologists/anthropologists, mainly and foremost in the Anglo-Saxon tradition. And it is not surprising in view of the intellectual traditions of these countries the social origins of the above two disciplines, the particular nature of these societies and of the colonialism they exerted (or the neo-colonialism they do exert) that the practice of archaeology/anthropology in the field appeared to produce a theoretical orientation in which the essential problem was that of socio-economic order and the ways in which that was

maintained.

Nevertheless the intervening years have seen a proliferation of writings by Marxists and non-Marxists alike on the above issues. It would seem that the initial negative reaction among Anglo-Saxons, based as it was on ideological grounds, has to some extent been alleviated and that it is becoming possible for anthropologists/archaeologists to step back and take stock of these writings, to place them in the context of historical materialism. Historical materialism is not synonymous with economic theory and history: it is rather a science of historical social totalities comprising economic bases and politico-juridical and ideological superstructures. The question then is whether it is possible to formulate these differences and explain their respective specific dynamics, at the level of the relations of production and reproduction. From that point of view, the following work intends to contribute to the answer of a Marxist anthropology, on the basis of an analysis of the concept "human essence", and can be described as an attempt to present in its main aspects the mutual interpenetration of nature and society as takes place within nature-conceived in its widest sense, comprising population settlement economy and culture - and the extent to which we can use and apply the Marxist theory for the interpretation of "primitive" and/or prehistoric communities in general. From a theoretical point of view, thus, the main contribution that prehistoric archaeology is likely to make in the near future will concern these issues, that is the manner in which specific economic, social and demographic variables interact with one another in specific environmental settings over long periods of time. Subject to its own

limitations "palaeolithic" archaeology (and palaeodemography to that extent) has a unique contribution to make to an understanding of the manner in which economy, society and culture evolved. This work also may be considered "selective" in the sense that it adopts the Marxist theory of society as its approach and tries to analyse some palaeolithic societies in Greece within this framework. The intention will be understood by the relevant workers in the field, but hardly any of them could explicate its meaning in a form which is acceptable by others. The problem is not only that no generally accepted definitions exist for dialectics and Marxism but that also inherent difficulties exist in the analysis of prehistoric societies. The Marxist concept refers to the connection between different types of technical organization of labour and different types of economic and social system. In Marx's theory "forces of production" was transformed into a new concept. Productive capacity is no longer merely a quantitative phenomenon: the dominant concern is no longer with its quantitative improvement, but with the qualitatively different technical forms of labour. This change of focus is conveyed by this very important formulation in Capital (III) of the core of historical materialism: the relations of production are here said to correspond to a definite stage in the development of the methods of labour and thereby its social productivity.

No concrete analysis exists in Marx-Engels theory for prehistoric societies, and the relevant material forms an organic whole dispersed through their writings, mainly. The German Ideology, The Economic & Philosophical-Manuscripts of 1844 and 1857-1859; Capital (Vols. I, III). The Origin

of the Family, Private Property and the State, Letters of Marx to V. Zasulich and F.V. Annenkov, and Engels to Lassalle. J. Bloch, C. Schmidt, W. Borgius, Lafargue and Kautsky. The study of social reality as motion and process might be said to be more central to historical materialism than to most other strands of social thought.

The order of presentation within this thesis posed certain problems because of the use of differential criteria of determination. On the other hand, views of particular writers and schools of thought had to be set against views on particular subjects, such as: dynamics of primitive societies, ethnographic interpretations, population relationships, and palaeodemographic questions, such as economy and demography, the cultural context of demography or the demographic reasoning of settlement and its regional expectations.

As it was impossible to include the vast literature involved in the various aspects of the relevant subject, what is not referred to in the text but was read or consulted is presented in the bibliography. Because of its dialectical character, historical materialism involves a new kind of scientific determinations, which cannot be "summarised". This is the purpose of the copious quotations from the works of Marx, Engels and Lenin (some may indeed find them all too plentiful). But every quotation is also an interpretation. And it seems to us that many relevant aspects of the Marxist method have been totally neglected (when not ignored), above all those which, we think, are indispensable for understanding the coherent structure of that method from the point of view of logic as well as content. This view, difficult per se, acquires a new context and extends to

a new dimension, when one considers that there does not exist any concrete, coherent theory in Marxism as far as it concerns palaeolithic societies, which is why many deny its application in the explanation of the mechanisms involved in the evolution and survival of these societies.

But this method, we are not seeking any ready-made answers to ready-made definitions. We must extract the practical essence of the theory from the method and its relation to the object. Marx defined the conditions in which a relation between theory and practice becomes possible in his Critique of Hegel's Philosophy of Right:

"It is not enough that thought should seek to realise itself; reality must also strive towards thought"

Since this study concerns both palaeodemography and historical materialism it was felt that in order to explain the constitutive elements and the specific development of palaeolithic societies it was necessary to divide the subject into six major parts. Historical materialism emerged from a definite theoretical context, but at the same time formed itself to a distinctive body of thought by breaking with this context at decisive points.

Chapter One examines these essential distinctions in connection with the dynamics of primitive societies, their material production in relation to the different elements of labour processes and to the social conditions inherent in these processes. The objective is to present the basic theoretical co-ordinates delimiting the space in which patterns of socio-economic determination can be discovered and explained. A materialistic approach cannot consist merely of enquiries into "the facts and givens" of a society, without taking

the precaution of constructing the concept of the object; the reality of a given fact is the individual that forms a society.

"My standpoint, from which the evolution of the economic formation of society is viewed as a process of natural history, can less than any other, make the individual responsible for relations whose creature he socially remains, however much he may subjectively raise himself above them" (Capital Vol. I, Preface to the first edition).

Chapter Two discusses the concepts of demography and population relating these to the Marxist approaches on population problems. Basically the static aspects of genetics is of little interest to demographers. It is certainly more important to know at a given moment the distribution of certain characteristics within a population. Such data obviously enable valid comparisons to be made elsewhere. Geneticists speak about genetic drift and selection, frequently ignoring the fact that the object of their observation is controlled by demographic factors that can be interpreted at only two levels: fertility and mortality which in their turn may be (and are) dependent on factors outside biological rationality.

In the field of palaeodemographic phenomena as related to settlement patterns and human occupation the concept of linear causality can no longer be applied to them as it has been hitherto. Subsistence regimes develop under the stimulus of a sequence of distinct elements - yet these elements are closely linked by the dynamics of their historical circumstances. On the one hand, are the people, their productive and reproductive activities; on the other hand is a given space within which people move. The crucial point to define then is; how, and according to what organisation

a given space has been produced, and to delimit its contents - that is of the people using that space, people who perhaps are opposed to the physical form or "purpose" of that space. One of the key factors which Marx defined concerning population and region was the extent to which the spatial concentration of population in certain areas was not caused primarily by raw material deposits or by other ecological "opportunities" but by the concentration of production in certain areas. Relations of production denote social relations among men. Settlement forms are conditioned rather by their particular productive relationships and shaped by endogenous socio-economic structures, than by exogenous mechanisms. Population "variables" such as density, growth rate, etc., are thus closely related to their spatial environment as it is created by specific productive activities. It is Chapter Three that deals with the above problems.

Chapter Four, discusses palaeodemography from an economic perspective and to what extent demography - which has been considered more as a cause of biological processes than related to conditions of production - can be analysed within the hierarchy of relations determining its form and content at any level of its formation - particularly the conditions of reproduction which comprise the material and social infrastructure of this formation. Laws of change refer to "constants" because they reflect the properties of socioeconomic relations. The apparent difficulties involved in the interpretation on that level of hunting-gathering societies stems not only from the fact of unsatisfactory data but from an unsatisfactory theoretical control over that data. Palaeoeconomic conceptualizations perpetuate the notion of the "mechanical" exploitation of nature by

men invariably linked with their immediate environmental system. But economic phenomena are not properties of nature. The Marxist formulation refers to the connection between different types of technical organization of labour, through which a given productivity is manifested and the extent to which this affects the appropriation of nature. There are, therefore, internal conditions for each society and at the same time common conditions for all the societies. The system of their function or transformation is determined by the active conditions of the process of production, by the structural causalities of the economy in society and at the same time by the general specific structure of this society.

The cultural context of demography is the subject of Chapter Five. Culture is that sphere in which social experience and knowledge are handed down from one generation to another. that is the sphere where social information is stored up, thereby making it possible for culture to develop and for new values to appear. Culture exists in society as a definite aggregation of material and non-material values, constituting the environment in which men live and act. In terms of the activity patterns of the total population it is the reaction to or acceptance of certain cultural elements which allow us to assess the significance of objects and events by examining the social disposition to act with respect to them. This framework is one in which demography takes on meaning in terms of "significant relationships" and a significant relationship cannot be determined independent of the context in which a population finds itself. With respect to the interaction between demography and culture, traditionally they have been considered as two non-corresponding aspects of human

populations, as two separate units which needed differential, sometimes opposing sets of explanation. That situation conditioned the subject-matter of demography in a self-reproducing reality that could be determined from a simple summation of facts. It would appear though that demographic balances are affected by quite complex cultural and socio-economic processes, endogenous relationships and interfering external factors which cover both material and "non-material" realities; these demand an explanatory understanding outside the rationally adaptive, self-interested calculations of the historically undifferentiated categories of the given demographic "package".

Chapter Six discusses the significance of the historical explanation for population settlements, economy and culture, in relation to the artefactual evidence of three Greek regions where the continuity of Palaeolithic occupation is visible, first of all at the local level and secondly in inter-connection with the surrounding areas. As stone tool material is the only "hard data" available for the moment in Greece, a sample of 1000 artefacts was taken from each region and all information was coded and transferred onto computer file. Assemblages were then analysed using the SPSS programs. Estimations on patterns of variation and the spatial representation of the 3000 stone tools were obtained by the use of multivariate analysis (non-metric multidimensional scaling).

Computer results have a deceptive exactness about them which is not conducive to a critical attitude, or to new hypotheses; their results are as valuable as the ideas they are "testing". Estimation of social processes is a matter of establishing contextually

and relationally meanings which are regarded as "moveable" as a part of the process through which society accepts certain lines of thought in order to rationalize certain lines of action. In that sense a dialectical approach to ideas, events and "things" as they arise in particular historical contexts is at the same time a verification achieved through practice; dialectics is practice and becomes practice through use. It is not a method covering explanations once and for all, but an open network of methodological principles incorporating categories and concepts with complex practical applications - quite apart from any traditional bi-valued positivistic logic where hypotheses are true or false and once categorized remain ever so. Lastly it is a method which allows for contradiction and the testing of hypotheses by inverting analyses if necessary, by regarding solutions pointing to new problems and questions pointing to new solutions.

The thesis therefore presents an analysis of the problems of the evolution of palaeolithic societies and a critical evaluation of their socio-economic structure, but does not attempt to presume a determinate solution thereof.

CHAPTER I

Demography and the Significance of Historical
Explanation1.1 The Interdependence of Man and Nature

Natural phenomena and all consciousness of nature have been reduced in the course of history more and more to functions of objective social processes. Marx showed, however, that society itself was a natural environment. This was meant not only in the immediately critical sense that men are still not in control of their own productive forces in relation to nature, that these forces confront them as the organized, rigid form of an opaque society, as a second nature, which sets its own essence against its creators, but also in the "metaphysical" sense that Marx's theory is a theory of the world as a whole. The human life process, even when understood and controlled, remains in a natural environment. Under all forms of production human labour power is only a manifestation of a force of nature. In his world man "opposes himself to nature as one of her own forces."¹ By acting on the external world and changing it, he at the same time changes his own nature. The dialectic of subject and object is for Marx a dialectic of the constituent elements of nature.

Marx questioned the doctrine of the social organism because it related to no particular and concrete body of scientific data, on the one hand, and as the basis for unguided progress, was related to no

particular human act on the other. Progress, according to the evolutionary school of that period², is located outside the human sphere and unrelated to anything that man does or knows; the general disposition to progress lies as much outside human control, as it is conceived by these thinkers in the 20th century as it did in the 19th and as did the action of providence in the 17th century. Progress is brought to the order of nature by man's abstract conception, just as providence is brought to it by his mystical conception, neither progress nor providence being directly connected with the actual processes of nature.

The question of Marx's concept of nature necessarily extends outwards to the question of the relationship between the materialist conception of history and philosophical materialism in general. Most of the existing literature, while it correctly brings out the qualitative distinction between Marx's materialism as a theory oriented primarily towards history and society and all the forms of materialism which had arisen in the history of philosophy, fails to take into account sufficiently those aspects of Marxist thought which link him to the materialists of antiquity.³

Here the question of the connection between the materialist conception of history and philosophical materialism is by no means secondary or purely of terminological interest. Marx described extra-human reality which is both independent of men and mediated or at least, capable of being mediated with them, by using different terms such as, "material", "nature", "objective moments of labour's existence"; since men constitute a component of this reality, the concept of nature is identical with the whole of reality in the

Marxist view. This did not result in an ultimate or dogmatic metaphysic but simply circumscribed the horizon of thought within which the new materialism moved. In the words of Engels, materialist philosophy, consists in explaining the world from the world itself.⁴ This concept was dogmatic enough to exclude from the theoretical construction anything Marx called mysticism; at the same time it was conceived undogmatically and broadly enough to prevent nature itself from receiving a metaphysical consecration or indeed ossifying into a final ontological principle.

As distinct from the materialism of Feuerbach, where man does not emerge as productive force but remains bound to pre-human nature and for which nature as a whole was an unhistorical homogeneous substratum, the essence of Marxist critique is the dissolution of this homogeneity into a dialectic of subject and object. Nature was for Marx both an element of human practice and the totality of everything that exists. The sensuous world and the finite men in their existing social setting (the essence and the appearance at the same time) are the only quantities taken into account. At bottom, there existed for Marx only "man and his labour on the one side, nature and its materials on the other." On the basis of the objective logic of the human work situation he attempted to comprehend the other areas of life as well. "Technology discloses man's mode of dealing with nature, the process of production by which he sustains his life and thereby also lays bare the mode of formation of his social relations and of the mental conception that flows from them."⁵ What is essential is that historically there is incompatibility of man and nature, i.e. in the last analysis the necessity of labour triumphs over the unity of man and

nature. As long as nature remains unworked it is economically valueless or rather, has a purely potential value which awaits its realization; "the material of nature alone insofar as no human labour is embodied in it, insofar as it is merely material and exists independently of human labour, has no value, since value is only embodied labour."⁶ This leads us to a further point. Natural factors do not affect human relations directly, but only in a mediated form. Natural geographical situations havenot "changed" drastically since prehistory, but they have taken a wholly different meaning, (for example, a sea which separates two peoples from each other at a primitive stage is, at a higher stage, their means of communication). The effect of natural factors therefore depends on the mediation of the economic (i.e. human) relations, which have arisen on the foundations of these natural factors. These effects are changed in the historical process. The connection between human relations and the effects of natural factors is basically a twofold one. It consists of both a decrease and an increase in the importance of natural factors to social life. Natural factors are less important now than they were for primitive man (less dependent now on harvest, soil fertility, weather etc. - factors which for the most part can be offset by technical means). But in other ways their importance increases, since man exploits nature more than he did in former times. Both the decrease and increase in man's dependence on nature are what is called "socialization of nature" and is actually the increased interlocking of society with nature. Nature's influence over man takes a "mediated" form, while it is social relationships which have "direct" influence. Marx differed both from idealism and from abstract

metaphysical materialism. He differed from them, but he also represented their synthesis, where he was able to arrive by removing any sort of "abstract speculations" by inserting reality where it belongs. Feuerbach has already taken the first step towards this, by recognizing that the essence of philosophy lay in anthropology, the science of man. But Feuerbach regarded man only as a species, a mere product of nature; for Marx, nature and man form a unity; in that sense social reality knows itself, and the philosophical problem becomes an anthropological sociological one.

The reference to the history of philosophy in ^TThe Holy Family provides further examples of philosophical-methodological motives not otherwise made explicit by Marx. Here we meet a general characterization of the Hegelian system which shows that Marx's materialism is not to be understood ontologically. According to Hegel the world is the applied logic of the self-development of the Absolute Idea.⁷ This means that the logical has priority over the historical and pre-determines it. Hegel comprehended society in its unity, Marx in its internal opposition; common to the two is the formation of "civil" society as the achievement of the civilized condition, which is a process of general development on the one side, of the particular history on the other, and the relation between the general and the particular. The achievement of "civilized" condition as the human agency is at the same time Marx's comprehension of Hegel. The formation of mutually antagonistic collectivities, internalized as collective interests in this opposition to each other, is the difference between Hegel and Marx. This difference is objective in itself, it is at the same time the difference between Hegel's subjectivity and Marx's

objectivity, and is the positing of the relation of the subjective to the objective in society, which is wholly on the side of Marx.⁸

1.2 The Historical Dialectics of Society and Nature

The traditional philosophical problem of the meaning of history and of the world is very important for the understanding of the relation between Marxist materialism and philosophical materialism in general. History is neither a chaotic collection of facts nor is it connected together to form a whole with a uniform, spiritual meaning as in Hegel. Marx did not give to history a "pantheistic" independence.

It is true that the social formations which replace each other according to a law bring something like an all-embracing structure into human history. But this is not to be understood in the sense of an immanent "teleology". All goals and purposes arising in reality can be traced to men acting in accordance with their changing situations. There is no meaning in isolation from these situations. This is certainly an extremely abstract expression of the real logic of knowledge. But it is precisely this abstract quality which makes it possible to determine the essence of "historicism" as a method of cognition. "Historicism" in its extreme expression is a variant of diachronic analysis, if only because it is oriented towards studying the transitions from one state of the object to others on a definite time scale. But that is not enough; "historicism" as methodology includes the diachronic approach as one of its elements, but essentially modifies at least one of the postulates of the diachronic approach; it gives up syncretic analysis and relies on a certain decomposition

of the "object" itself, singling out those components that are responsible for the change. These circumstances - emphasis on dynamics and functioning - make it necessary to take into account temporal characteristics, to which the time concept becomes a necessary element of description. But, obviously one is not dealing here with the historical time with which the development of the object is concerned, but with a special type of time that might be called the time of functioning. Leaving aside the specificity of the social time and taking into account only the fact that the concept of the social time is far from identical to mere external chronology expressed in absolute units, one may insist that the distinction between historical time and the time of functioning is based on the distinction between respective temporal scales.⁹

The inner historical time has its own, special units of measurement. Taken generally, they are correlated with certain major changes in the structure of the object, in the forms of its interaction with the environment and its modes of vital activity. The unit of "measurement" is related with the realization of an interconnected totality of functions. Translated in the language of chronology they become essentially different. But this difference is not absolute, so that these types of time frequently overlap when complicated social processes are described. In that sense, knowing the composition of the object into a time-scale does not imply knowledge of its structure. Structure is not the dead cast of the frozen object, but a characteristic of those of its invariant aspects which are only revealed during the analysis of its actual dynamics. One of the assumptions on that, is that the elements or "parts" of the object are not (or

not only) determined by their substantial substratum properties, but by their position within the investigated whole. The point is that a complete abstraction from any time is only possible in a strictly limited class of problems - i.e., dealing with the investigation of the anatomy or morphology of the object. Considered in this way, it becomes clear that the most essential specific feature of Marxism is that in the analysis of social reality it combines "historicism" and dialectics as a definite general approach to the explanation of development mechanisms. For Marx, questions directed to pre-human and pre-social existence of development should not be posed abstractly; in each case they presuppose a definite stage of the theoretical and practical appropriation of nature. All putatively primeval substrata are always already involved with what is supposed to emerge from this activity and are for precisely that reason by no means absolutely primeval. The question of the act of "creation" of man and nature is therefore less a metaphysical than a historico-social question. Marx set forth the history of the individual interests in their conflicting relations to each other, resolved in the collective interest, of the social formation, within itself; the resolution of the conflict is not whole, partly because the process of establishment of the "new" forms of society is incomplete (in which the former communal relations are carried forward albeit proforma); partly, however, the conflict is never resolved in the new form of society because the interest of the subject is not wholly subordinated to the objective interest; the interest of the subject is at the same time objective and subjective, being both internal and externalized in the behaviour, relations and production of the group in the society.

When Marx treated the history of previous human societies as a process of natural history this had first of all the critical meaning that the "laws of economics confront men in all ... planless and incoherent production as objective laws over which they have no power, therefore in the form of laws of nature"¹⁰ Marx had in mind the experience gained in the course of the perennial "prehistory" of man, that in spite of all technical triumphs, it is still always "nature" (under special exploitative conditions) which is victorious in the last resort and not man. All the contrived machinery of modern industrial society is merely nature tearing itself to pieces, in that it is not socially controlled.¹¹

However, in addition to this accentuation of its critical aspects, Marx used the concept of natural history in the broader sense given to it by the evolutionist theories of the 19th century. When he reproached the "abstract materialism of natural science" for excluding the "historical process",¹² he had in mind nature as well as society. Marx's approach in which the development of the economic formation of a society was conceived as a process of natural history, meant that he viewed the historical process in its strict necessity without engaging in aprioristic construction or using meta-psychological principles of explanation.¹³

Lenin, discussing in particular the natural-historical character of the Marxist method of investigation and its relation to Darwinian evolutionism, writes:

"Just as Darwin put an end to the view that animal and plant species are unconnected, that they arose fortuitously "created by God" and are immutable, just as he was the first to place

biology on a fully scientific foundation by establishing the mutability and the succession of the species, so Marx put an end to the view that society is a mechanical aggregate of individuals, in which the desired changes can be brought about at the will of the authorities (or if you like of society and government) and which emerges and changes casually and was therefore the first to place sociology on a scientific foundation by laying down the concept of the economic formation of society as the totality of existing productive relations and by establishing that the development of such formations is a process of natural history"¹⁴

Marx himself, while recognising the specificity of social laws was aware of the relation of his theory to that of Darwin:

"Darwin has interested us in the history of nature's technology i.e., in the formation of the organs of plants and animals which organs serve as instruments of production for sustaining their life. Does not the history of the productive organs of man, of organs that are the material basis of all social organization deserve equal attention? And would not such a history be easier to compile, since, as Vico says, human history differs from natural history in this, that we have made the former, but not the latter"¹⁵

Engels distinguished natural from human history in a very similar manner: "the whole of nature also is now merged in history, and history is only differentiated from natural history as the evolutionary process of self-conscious organisms."¹⁶

Natural and human history together constitute a differentiated

unity. On the one hand the history of society is a real part of "natural history" in that facts characteristic of pre-human history continue to exist in human society. Marx was thus able to describe the instruments of production by whose construction and application men are essentially distinguished from animals as "extended bodily organs". On the other hand, one should not neglect the specific history between the course of history in "development" and in society. This makes non-permissible the simple translation of natural laws to social relations, as in the many varieties of social Darwinism.¹⁷

In a letter to Kugelmannⁿ, Marx, criticizing Lange, wrote:

"Herr Lange has .. made a great discovery. The whole of history can be brought under a single great natural law. This natural law is the phrase (in this application Darwin's expression becomes nothing but a phrase) "struggle for life" and the content of this phrase is the Malthusian law of population, or rather over-population. So, instead of analyzing the "struggle for life" as represented historically in various definite forms of society, all that has to be done is to translate every concrete struggle into the phrase "struggle for life" and this phrase itself into the Malthusian population fantasy."¹⁸

Engels showed that certain theories borrowed from the bourgeois relations and their reflection in the realms of ideag^r were applied to the development of organic nature and then put forward by the social Darwinists as supposedly pure natural laws of society:

"the whole Darwinist teaching of the struggle for existence is simply a transference from society to living nature of Hobbe's doctrine of "bellum omnium contra omnes" and of the bourgeois

economic doctrine of competition together with Malthus theory of population. When this conjurer's trick has been performed ...the same theories are transferred back again from organic nature into history and it is now claimed that their validity as eternal laws of human society has been proved."¹⁹

Finally, one aspect of the relation between nature and history is of relevance for the method and theory of science. Since the work of the Neokantians, it has become customary to assign to the historical and the natural sciences modes of investigation which are different in principle. Some distinguish between the method of causal "explanation" peculiar to the natural sciences and the method of intuitive "understanding" peculiar to the historical, human sciences. Others divide reality into two entirely distinct parts. Nature was conceived in Kantian form as the existence of things subject to laws. The "nomothetic" character of the natural sciences corresponded to this conception. History was said to consist of a profusion of value-oriented, basically unconnected "individual" data only accessible to a descriptive "ideographic" method.²⁰

It thus became something beyond rational analysis. Marx admitted no absolute division between nature and society and hence no fundamental methodological distinction between the natural and historical sciences. An opposition between nature and history is created by certain approaches in that they exclude from history the productive relationship of man to nature. Marxism insists on the necessity of concrete research into historical phenomena and events in order to reveal their objective interrelationship with other phenomena and facts, and to establish their essential traits. No general laws exist in their

pure form. They operate under diverse conditions embracing the unique traits of a given social environment. They manifest themselves in various situations reflecting the dialects of the universality and diversity of historical processes. Comparative analysis reveals similarities of the objective tendencies in social development in spite of the diversity of natural environment, history, culture and demographic structure of the given societies.²¹

The reproach that Marx proceeded too "naturalistically" when he wrote in "Capital" of the historical process of the economic formation of society, as a process of natural history, is misguided, because it presupposes precisely the thesis that there is a fundamental methodological distinction between the attitude of research into nature and that of research into history. Scientific thought cannot recognize any area "sui generis"; absolutely inaccessible to explanation in accordance with uniform laws. X

Materialistic approach on the other hand, presupposes a thorough study of any process or phenomenon of social life in its historical perspective. Empirical knowledge and theoretical generalizations should be combined in such an inquiry. As Lenin stressed, "Marxism does not base itself on anything other than the facts of history and reality."²² Accumulating facts is the first stage of a scientific investigation. What Marxism objects to is the factual work being confined merely to discovering and describing facts, without interpreting them from the point of view of the historic regularities which are revealed by those facts. This understanding of history develops in correspondence with the concrete historical situation, as a result of the analysis of new facts and phenomena. In the case of man-made

objects such as social history, methods of inquiry and presentation are, despite all their formal differences, internally related to each other, whereas the interpretation of a nature separated from all human practice must ultimately remain a matter of indifference to the nature. Before the existence of human societies, nature could only achieve polarities and oppositions of moments external to each other; at best interactions but not dialectical contradictions. In the Marxist view, all natural being has already been worked on economically, and hence conceived. The question of the dialectical and non-dialectical structure of this being, since it is isolated from practice, is a purely scholastic one. The concept of nature cannot be separated, either in philosophy or in the natural sciences, from the degree of power exercised by social practice over nature at any given time. Although even Marx occasionally used the concept of matter alongside that of nature, the "practical" character of his theory ensured from the outset that materialist economics, not physical factors or speculative notions, determined the reality which these concepts covered.

1.3 Matter and Labour - Content and Form.

The epistemological definition of matter as objective reality existing outside and independently of all consciousness corresponds entirely with the definition of matter given by Marx, from the point of view of social labour. Man has not created matter itself. And he cannot even create any productive capacity if the matter does not exist beforehand.²⁴ In the "Paris Manuscripts" he adopts a similarly objective viewpoint and the theme is again taken up in "Capital".

Here the economic analysis presupposes the philosophical-materialistic view that labour, itself only the manifestation of a natural force, is always dependent on a substratum which cannot be reduced to labour alone. If labour is the formal "creator of value" the stuff of nature is its material creator. Hence, the division of natural material and labour cannot be absolute. At the level of the individual use-value, it may in abstracto be possible to make a distinction between what derives from labour, i.e. from the activity of men, and what is provided by nature as the material substratum of the commodity. But as far as the world of experience as a whole is concerned, the material provided by nature cannot be distinguished from the practice - social modes of its transformation. Human productive forces leave their mark on the material of nature intellectually and practically. This process however completely confirms nature's independence of consciousness rather than destroying it. The materials of nature - having undergone the labour-process - remain components of the sensuous world. The form of wood, for instance, is altered when one makes a table from it. Yet, for all that, the table continues to be that common, sensuous thing, wood. In the finished article which is the result of labour, the motion which mediates it is extinguished, but inversely if the product of labour undergoes further processes, it is reduced again to a mere moment of the mediating "moment". What is immediate at one stage of production is mediated at another.²⁶ The objectification as loss of object which defines the labour-process has in addition a more general theoretical content.

Human labour is a unitary process, the purposeful expenditure of labour process. In all forms of society it is a social relation

and in all forms of society, whether primitive or not, it is relation to nature whereby natural materials are transformed. That unitary process in its concrete form is useful labour and as such it is labour in society whose purpose is the production of objects useful to the particular society. In its abstract form, labour in society is taken up in relation to the process of circulation rather than to that of production and of consumption.

We have therefore two types of production in society, the first or most primitive being that in which production takes place in direct relation to consumption, the unit of production and of consumption being the same. In this mode of production there is no significant amount of exchange of products between the social unities that are the units of production, whether family or kinship group, tribe, village etc. In its predominant form, labour here takes the concrete form of production for direct consumption. The second type of labour is that in which the unit of production is clearly separated from the unit of consumption, and exchange of products on a considerable scale takes place between the producing units. At this point one now considers the distinction between social labour as abstract and concrete in relation to nature and in society, and at the same time the distinction between direct and indirect labour processes, or the dual forms of labour in relation to nature and in society. The increasingly indirect relation to nature is measured by the increasing number of steps in the concrete labour process or in the number of instruments to make instruments; and this constitutes a simple index of the alienation from nature, for it is the primary measurement of that form. It is production for further production. The increasingly

indirect relation of labour in society is at the same time production in society for further circulation through exchange; it is production for indirect consumption. With the introduction of the relation of concrete and abstract social labour, the direct and indirect relations of production and circulation in society are promulgated. These are dialectical moments of transformation of society. They are ranged on a "chronological" scale; the simpler or more direct takes place earlier in time, nearer to the beginnings of culture; the more complex with more numerous stages of mediation in production takes place later. The dialectical moments of labour in society are real; being at once actual, typical and temporal. They take place in the brain and in society, for the relation of labour to nature and in society are not merely correlative to one another but are mutually determinant in their evolution from simple to complex forms.²⁷

Engels directed attention to the distinction between labour and work, which has a parallel in Marx's distinction between abstract and concrete labour; as concrete labour it is work, the production of use-values; as abstract labour, is in short the production of commodity value. Labour as the creator of use-values is independent of any particular social end, purpose, relation, condition of human existence; as abstract labour it is abstracted from any given society, being the general material interchange between the human kind and the natural environment. Wants and desires are not natural nor are they invariable. They are formed from one society to the next, they are culturally variable; human nature is absorbed into culture but the process "disappears" in the product. The generality of the human nature is absorbed in the human being; but the human being is the

product of two dialectical moments, one abstract - i.e. culture in general - and the other concrete - i.e. the particular culture. Marx's category of labour was expressed in parallel with his category of culture but only the former was worked out. Both are necessary in reference to the problem of the place in nature of the human kind.

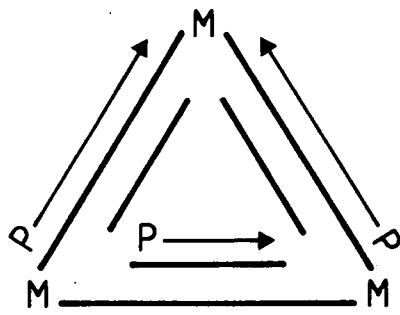
Once the materials have been extracted from nature they move about for a time in society before their eventual return to nature. The movement of the products of concrete labour in society is the metamorphosis of the form of goods into commodities, commodities into "money" and back into commodities. The formal interchange in circulation has systematically been elaborated by Marx, whereas the material interchange with nature was set forth in aphoristic insights.

The labour of the body is the means of comportment by the human kind as a whole with regard to the resources of nature. It is the material condition of human existence in particular and the material condition of organic existence in general. It is an unceasing process of ecological and economic relations. This ceaseless interchange between the living body and the natural world is effected in the production of useful things; concrete wants are thereby met in concrete ways. The labour of the body is concrete labour, the original and ultimate form of labour, shared with all living organisms. But in man, as concrete labour, the work of the hands is the production of useful things - it is production with an end in view.

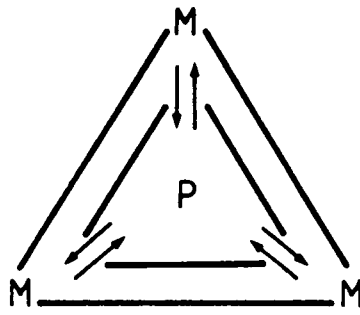
1.4 Labour Hierarchy of Functions

The fundamental problem for Marx is how the laws of human and natural history are related, and how they change. The way to effect the required changes is subject in part to human control. We are faced with the problem of changes in the dialectical moments of form in relation to function, accumulation of differences and production in relation to reproduction. Marx distinguished between accumulation in general and capitalist accumulation in particular, showing the error of Malthus and Jones²⁸, who failed to make this distinction. The process of capital formation comes from the labour process which means to expand the value of capital; reproduction is an economic process both in primitive and in civilized societies and in any mode of production whether Asiatic or capitalist. In its simpler forms, e.g. in primitive society, or in the Asiatic mode of production, it is simple accumulation. But even the simpler forms, have likewise gone through their internal development. In primitive societies the process of development is slow; considered as an economic category, reproduction has under all human conditions a time factor to which it is associated, but under "civilized" conditions this time factor comes under social control to an increasing degree. The time factor in reproduction is fixed by natural and political-social inventions.

The key to reproduction is accumulation, but in order to accumulate, one must first store up; immediate consumption is to be avoided. The physical storage of primitive economies is replaced in the capitalist mode of production by accumulation on constant capital, in means of production, in machines to make machines; in both primitive and capitalist modes of production, however, the skill of the labourers is stored up and accumulated.²⁹



Feudal Society



Communal Society

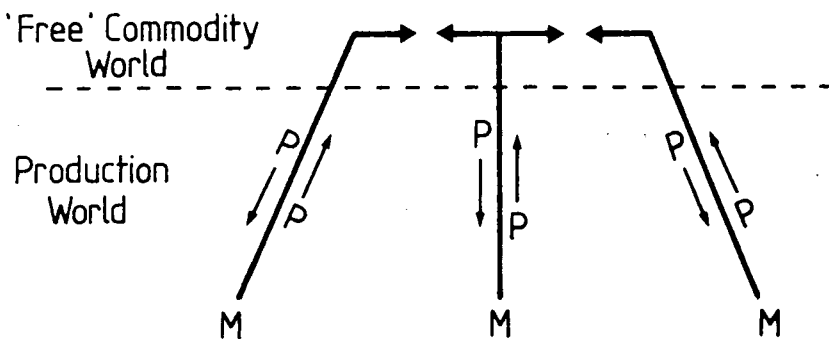


FIG 1.1 : A diagram to show the different modes of production and their interaction within each. M = man
S = society
(adapted from different authors and H. Cleaver, 1979)

The specifically Marxist discovery that "historical relations are objectified in the form of commodity can be misinterpreted so as to produce the idealist conclusion that, since Marx reduces all economic categories to relationships between human beings, the world is composed of relations and processes and not of bodily material things."³⁰ One of the main endeavours of Marxist analysis is no doubt to penetrate the surface of economic reality which has hardened into things in order to get at the essence behind it - the social relations of men. Production is always social. To quote from Marx:

"... the social relations within which individuals produce, the social relations of production, change, are transformed, with the change and development of the material means of production, the productive forces. The relations of production in their totality constitute what are called the social relations, society, and specifically, a society at a definite stage of historical development, a society with a peculiar distinctive character. Ancient society, feudal society, bourgeois society, are such totalities of production relations, each of which at the same time denotes a special stage of development in the history of mankind."³¹ (Fig. 1)

The use-values of the things produced by them is realized without exchange "by means of a direct relation between the objects and man."³² The social character of private labour which has taken place independently of each other is first revealed in the exchange of the products of labour i.e. in the total social process. The pre-bourgeois forms of production, whose essence consists in personal relations of dependence between men, are transparent enough to prevent

labour and products of labour from taking on a "fantastic form different from their reality."³³ The products of labour do not become commodities. The mode of production is a unity of two indissolubly connected sides of production; the productive forces and the relations of production, which respectively express two sets of relations among men: namely their relations with nature and with each other.

The productive forces express the relations of men and society with nature and the level of their development. In the most abstract terms, production is the process of labour, that is, the active, conscious and purposeful material activity of men aimed at adapting natural resources to human needs. The objects of labour itself are the general and necessary elements in the process of labour. However, they have a different role to play in the process of production. The objects of labour are passive. They are everything that is subjected in the process of production to some treatment and change as it is converted into a product required by man with the help of the means of labour. In contrast to the objects of labour, the means of labour have an active role to play in production. But they can be used only in contact with living labour, with human activity. (Fig. 2) Man has the decisive part to play in production and consequently it is the active elements of their labour process, that is, the means of labour and men, with productive skills, knowledge and experience carrying out the production of material goods, that constitute the productive forces of society.

The distinction between the means and the objects of labour is a relative one because the same things can be used for different

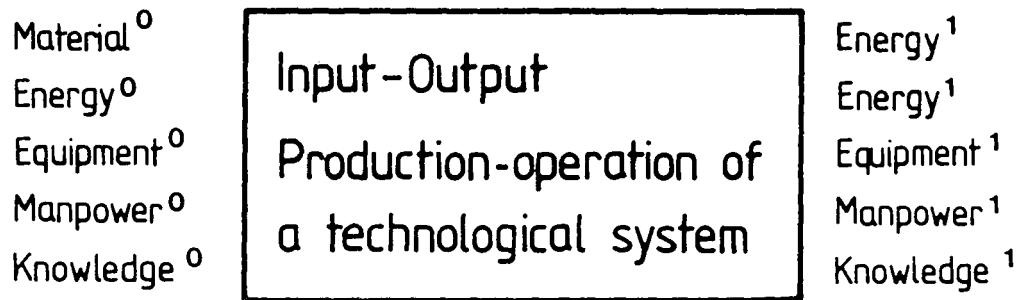


FIG 1.2 : a representation of how production operates under "any" technological system.

purposes in production. However a fundamental distinction does exist. The 'objects', being passive elements of production, do not characterize the quality of society's relations with nature, but the properties of nature which man uses in production. It may, of course be said, that the materials man uses also characterize the level of development of the productive forces, because progress in production also involves the inclusion of new materials, which enable man to make use of a wider range of the properties of nature. But, these new materials play an active role in production only if they enter production as a means of labour and if their properties are used to act on the objects of labour. Consequently, objects of labour, are that part of nature which is involved in production and which is transformed. Objects of labour are a "record" of the properties of nature which man is able to use in production, at a given period, but only the existence of corresponding means of labour makes it possible to turn this possibility into reality.

The process of production has three abstract moments: raw material instruments of labour, and form which, as labour, constitutes a material relation among moments, themselves material. All materials of nature appropriated through labour are use-values. But not all use-values are appropriated, i.e. humanly mediated, materials of nature. The means of labour, the instrument of production is in general "a thing or a complex of things which the labourer interposes between himself and the object of his labour, and which serves to conduct his activity to that object."³⁴ While individual consumption consumes use-values as the means of subsistence of the living individual, productive consumption consumes them as the means

whereby labour, the labour-power of the living individual is enabled to act.³⁵ In order to maintain the products of past labour in their objective existence as use-values, it is necessary for them to remain in contact with living labour, to be "thrown" as Marx put it, into the labour-process as the result and the conditions of existence of that process. If the possibilities inherent in a use-value are realized, neither in the sense of the individual nor in that of productive consumption, if it is not put to the service of human purposes, it reverts to the sphere of the "metabolism of nature".³⁶ With the destruction of the use-value, the quantum of labour embedded in its material is similarly lost. We are dealing here with a merely relative "indifference" of form towards material; when a product composed of natural material is incorporated into further labour-processes, the amount and type of labour already concealed within the product is by no means a matter of "indifference". It is characteristic of the simple process of production that in it, the qualitative determinacy of the labour already expended continues to be upheld. This maintenance of quality in the process of creating value simultaneously involves the maintenance of the quantity of labour.

It is true that living labour adds a new quantity of labour to that already objectified. But it is not the added quantity of labour which maintains the objectified labour in general. When added to the product, it transcends the mutual "indifference" of the form and the material subsisting with it. The material which has been worked on assumes a form more suitable to human consumption as stage follows stage in the process of production "until at last it acquires

a form in which it can be the direct object of consumption, in which the consumption of the material and the abolition of the form results from its enjoyment by man, and in which its transformation is its utilization."³⁷

While natural processes independent of men are essentially transformations of material and energy, human production itself does not fall outside the sphere of nature. The socially active man confronts the material of nature as one of her own forces. In referring to the action of man on nature, Marx was seeking to explain that the things which serve to satisfy human needs undergo a qualitative change. For dialectical, as opposed to mechanical materialism, motion, that essential category of dialectical thought, is not merely a change of place, but also, in fields higher than mechanics, a change of quality.³⁸

With this concept Marx introduced a completely new understanding of man's relation to nature. Although the notion was already presented by the Enlightenment that nature should be seen essentially from the point of view of its usefulness to man, the new dimension is, the analysis of the notion. The epoch of the Enlightenment was incapable of analysing labour as the means of appropriation, of moving from this to the necessity of the division of labour and the accompanying class divisions and finally of revealing the class character of bourgeois society, since this was an epoch when the bourgeois posited itself as an absolute, and viewed the concept of class, if did so at all, purely as a moment of past history.

Hence the real background of the Marxist concept of transformation did not even enter the field of vision of the Enlightenment.

Nature was seen as something immediately given, instantly capable of apprehension, whereas Marx stated that "the object of labour can only become raw material, when it has already undergone a change mediated through labour."³⁹

1.5 The Individual in Society: Knowledge and Value

Whereas the animal is bound, in this appropriation of the world of objects, to the biological peculiarities of his species and hence confined to definite regions of the world, the universality of man is signified by the fact that he can appropriate, at least potentially, the whole of nature. Through labour he can make nature his inorganic body, both as a direct means of life and as the matter, the object and the instrument of his life-activity. The externalization of wants and their internalization as satisfactions are social relations on the one side and human relations with nature on the other, the latter being intermediated by human work, with tools, which were conceived (by Marx and Hegel as well) as the social instruments of labour. Thus man, unlike animals, "is free in the face of his product"⁴⁰ because his relation to nature does not consist purely in the satisfaction of immediate physical needs: "Hunger is hunger. But the hunger which is satisfied with cooked meat, eaten with knife and fork is another hunger than that which swallows raw meat with the aid of hands, nails and teeth. The mode of production produces, both objectively and subjectively, not only the object consumed but also the manner of the consumption."⁴¹ (Fig. 3)

Human nature, that totality of "needs and drives" is only to be

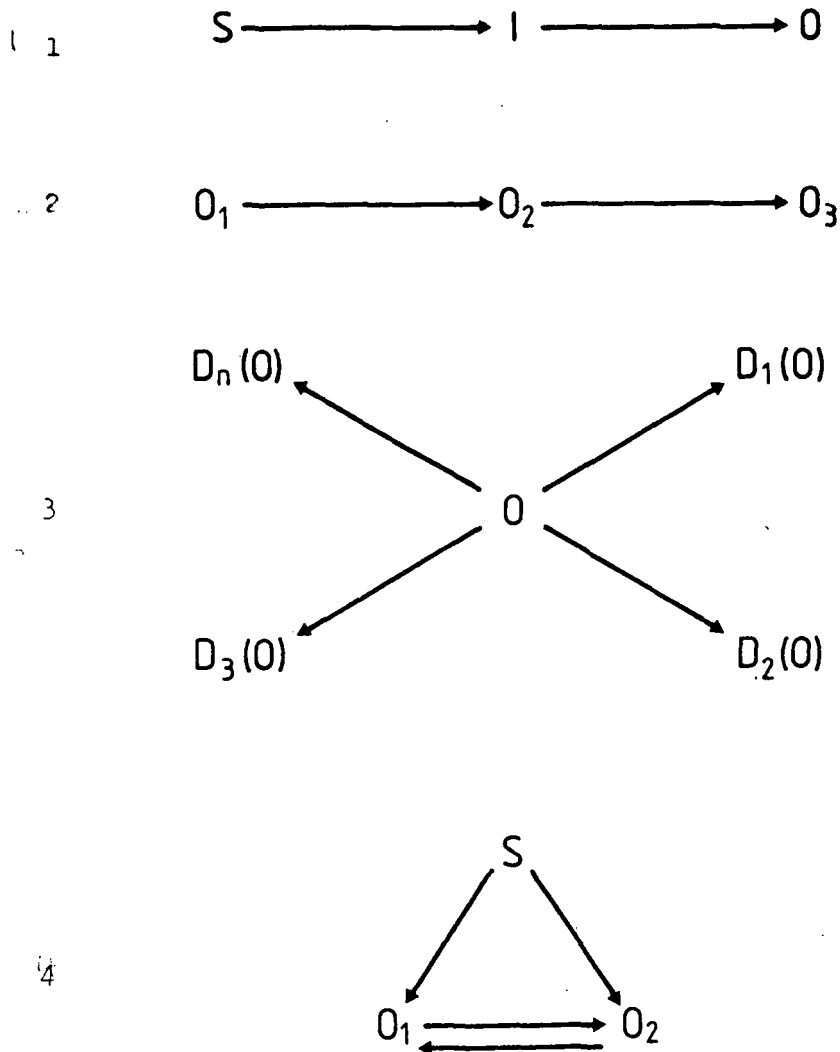
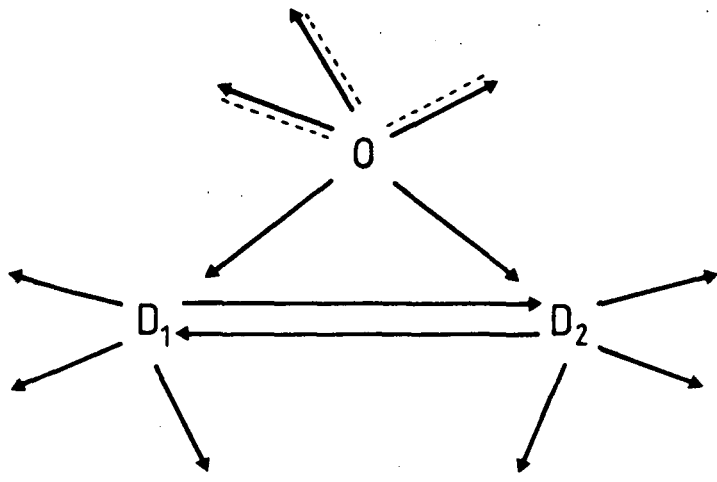
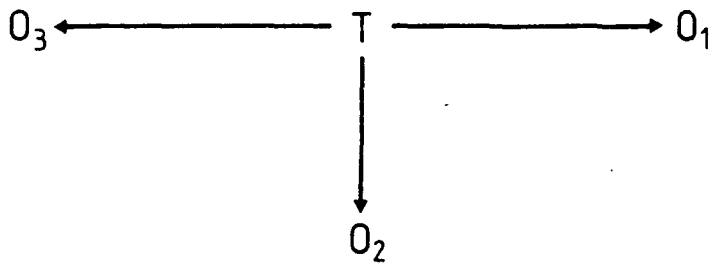


FIG 1.3 : Series of diagrams (1-7) to show the effect and interaction of economy in general (tools, production and population) in a society. S = subject. I = instrument. O (1) object. S transfers O by the use of I. (1) If then we consider two O ($O_1 + O_2$) O_1 transforms O_2 but O_2 acts upon the transformation of O_3 . (2) It is obvious that a "real" object O (input) acts upon any O_1 O_2 O_3 etc. (output) which means that O is source³ of transformation of a second order through determinants of a different order (D (c)) So. - accumulating nature of knowledge, even in a simple process of interaction. Thus, - basic knowledge basic analytical power of a determinancy (direct and indirect) leading to dialectical contradiction and interaction. (3) If we consider human practices, double interaction: each object "determines" itself; the two objects are means of production (labour transforms material through "action"-tools - not hand use but both hands use. (4)

5



6



7

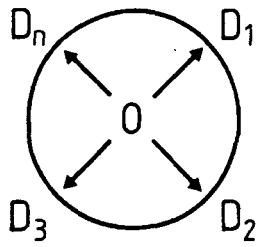


FIG 1.3 cont: So that we result at a "universal" action of interaction (mode of production both S+O - man-nature process (5) with tool (machinery later) unique (apparently) source of change(s) - through labour "chosen" form S (6) and potential (differential) orientations of the O as a tool (7) (adapted from P. Roubaud 1980)

conceived as a dialectical historical process, involving not only the unmediated coexistence of a constant and a variable component but rather the constitution of the life of the general through the particular.⁴² The essence of man arises in each case from a definite form of society; it is "not an abstraction inherent in each single individual" but rather the "ensemble of social relations."

Turning to the relations of society one must consider first the nature of the society itself. Society is an object that can be perceived with the senses, but it is at the same time a suprasensory object, a set of relations and the symbolic representation both of the sensory and the suprasensory object. In his treatment of commodity fetishism, Marx begins with the opposition between mysticism and sensory investigation. The mystification of commodities arises from their social character, their character as the products not of social production but of the social relations between human beings, who now stand with each other not as producers, but as buyers and sellers of the product. It is the social relation that is carried over into the commodity relation; the mystification of the social relation is the germ that has infected the commodity relation with the same disease.⁴⁴ Society is not a passive category into which the human relations are poured, but is the nexus of individual relations, just as the individual is the nexus of social relations. These reciprocal relations form an interaction, an agency whereby social conditions are formed and changed. Moreover, the relations of human beings in society are various; there is no species-specific behaviour for mankind as there is for animal species. This is the error of modern ethologists (for example

K. Lorenz) and their insistence on "non-understanding", that relations of human beings vary from one society to the next, and from one era in the same society to the next. We are not confronted here with a problem to be decided purely theoretically, a problem of the insufficiently determined dialectic of the "particular" and the "general". We have rather to deal with the fact that historical reality itself, includes eternal categories which are on the one hand relatively independent of all change, but which on the other hand do change through societal relations. The dialectical element of Marxist thought does not consist in the denial that matter has its own laws and its own movement, but in the understanding that these laws can only be recognized and appropriately applied by men through the agency of mediating practice - that is society.

This is why Marx distinguished between the laws valid in general for a social formation and their more or less developed forms of appearance. The political economists of the 18th and 19th centuries fastened upon the story by D. Defoe. It is a convenient fiction, which Marx understood rightly to have concealed within it the myth of the capitalist individual. The ideological burden of this fiction, or its mythical core, is the self-made man, the rugged individual, who does not need society; society presupposes human individuals; these individuals, on the contrary do not presuppose society.⁴⁵

Marx, as we have already seen, raised the question of the subjective and objective aspects of man and society relative to the identity of interest of the individual within the collectivity, which is in turn connected to the identity of the individual and to the process of formation of the individual in society as a human

being; man does not become a human being in general, but becomes human only in a particular way, within the particular collectivities. In the process of formation of a complex society of antagonistic social interests, he becomes an internally antagonistic creature alienated within the collectivities from which he derives his particular social nature. The further question of that nature of human nature in the complex condition of society is thereby posited.⁴⁶

Deterministic approaches do not differentiate between that which is brought about by the conscious intervention of man and that which takes place without the specifically human agency. Man is part of nature, and as such the natural processes take place upon and across his physical body; but this body has already been modified culturally. Therefore, the natural processes in question take place in part mediately, in part immediately or directly upon the human organism and through it, by means of it. As such, they are related, in both ways, to concrete and particular human qualities - human work and human social relations.

Since man has at no time left the natural order, the same forces continue to act upon him and through him as those which act upon and through the bee or the chimpanzee. At the same time his brain and hand, which have set man aside within the natural order, are interactive with the natural processes. Thus, the same forces which have enlarged the brain and shaped the hand lie at once within and without the human being; they are not the sole forces at work upon man, but these natural prehuman forces are part of the materials which man applies in the shaping of his work-tools. These human processes are not determinate nor can they be considered as part of

any determinism in a precise way. First, they are subject in part to the social variations derived by the human conceptualizations. The brain conceives in a way that is solely human and pan-human, but what it conceives and the material that it has to work with, varies from people to people and from society to society. Both the universally and solely human culture and the particular cultural variations are at work in their interaction in the conceptualization of the brain. They are not determinate, still less are they deterministic, in the sense that knowledge of natural working, whether animate or inanimate and of the human brain, is still incomplete.⁴⁷

Teleological explanation on the other hand, introduces the extra-human knowledge of man. his work-relation to other men and to nature; it has become associated by those who have recognized the inadequacy of man and the power of his brain in the face of these problems which are insuperable at the given stage of development, with an appeal to an extra-human source of knowledge; the knower outside this sphere is the deity who sees the direction in which men are going, in some version can change the direction on appeal, in others is the do-nothing god.

Marx opposed any kind of naively teleological interpretation of extra-human nature. He praised Darwin's "Origin of Species" in a letter to Lassalle, on the ground that it "not only dealt the death-blow for the first time to teleology in the natural sciences, but also empirically explained its rational meaning..⁴⁸

Although Hegel ridiculed the opinion which sees the hand of a purposeful Creator in all possible natural phenomena as "childish"

his own idealist philosophy did, nevertheless, contain the idea of a "final universal goal". It is precisely the denial of such a final goal, and such a previously given meaning of the world, which unites Marxism with the tradition of philosophical materialism and scepticism since classical times, and with all anti-metaphysical, anti-rationalist philosophy in the wider sense. For Marx, the world was not a metaphysically conceived universe, but the world of man, and purpose, in the strict sense, is always a category of human practice.

Engels, in the "Dialectics of Nature" writes:

..."How did the innumerable varieties of animals and plants arise? And how, above all, did man arise, since after all it was certain that he was not present from all eternity? To such questions natural science only too frequently answered by making the creator of all things responsible. Copernicus, at the beginning of the period, writes a letter renouncing theology; Newton closes the period with the postulate of a divine first impulse. The highest general idea to which this natural science attained was that of the purposiveness of the arrangements of nature, the shallow teleology of Wolff, according to which cats were created to eat mice, mice to be eaten by cats, and the whole of nature to testify to the wisdom of the creator. It is to the highest credit of the philosophy of the time that it did not let itself be led astray by the restricted state of contemporary natural knowledge, and that - from Spinoza to the French materialists - it insisted on explaining the world from the world itself and left the justification in detail to the natural science of the future."

1.6 Material Production as the Basis of Social Life

The fundamental materialist tenet could be summed up as follows: the laws of nature exist independently of and outside the consciousness and will of men.⁴⁹ Dialectical materialism also holds to this, but with the consideration that men can only become certain of the operation of the laws of nature through the forms provided by their labour-processes. This provides the important connection between the independence and the social determination of the laws of nature.

Since classical times and right up to Machiavelli and even Pareto, alterations in the configuration of society have been understood as part of a cyclical movement according to natural laws. A notion which frequently appears in this connection is that of the exchange of commodities and money or the inverse. Thus in the dialectics of Heraclitus: "All things can be exchanged for fire, and fire can be exchanged for all things in the same way as commodities exchange for gold and gold for commodities" In Marxism we meet an analogous conception, but placed at a different level:

".. As the exchangeable values of commodities are only social functions of those things, and have nothing to do with their natural qualities we must first ask, what is the common social substance of all commodities? It is labour. To produce a commodity a certain amount of labour must be bestowed upon it, or worked up in it. And I say not only labour but social labour. A man who produces an article for his own immediate use, to consume it himself, creates a product, but not a commodity. As a self-sustaining producer he has nothing to

do with society. But to produce a commodity, a man must not only produce an article satisfying some social want, but his labour itself must form part and parcel of the total sum of labour expended by society. It must subordinate to the division of Labour within Society.."⁵⁰

The point that Marx has made is that production, distribution, exchange, wants and their satisfaction, the division of labour, are social relations and undertakings to which social categories correspond.

These relationships which, in primitive society, are direct and concrete, private labour for the immediate satisfaction of the wants of the individual, family or community, give way in civil society to differentiated forms, and the opposition of private to social labour. Production in civil society is mediated. By increasing division of labour, the unit of production is ever more separated from the unit of consumption; it is no longer the production of useful things directly consumed by the immediate producers; on the contrary, they are met by the labours of others i.e. by commodity exchange and production. The products of the social labour are given an abstract expression in order to effect the exchange.⁵¹ Apart from this, such an important phenomenon for the understanding of social processes as the division of labour does not simply result from the development of one factor (as economy for example). It is also a response to a situation found in nature: "... it is not the absolute fertility of the soil, but its differentiation, and the variety of its natural products, which form the natural foundation for the social division of labour, and which, by changes in the surroundings within which he lives, spur man on the multiplication of his needs, his capacities,

his means and modes of labour." In its material aspect, the labour-process does not undergo any change radically dividing the stages of production from each other. The stages of production are distinguished from each other not by what is produced but by the way in which it is produced.⁵²

The "way in which it is produced" refers obviously to the economic "status" of society. A first step in the dialectic of society is the relations between the economic factor and the superstructure raised upon it in history: the state, law, philosophy, science, religion, ethics. (Fig. 4)

The importance of these categories lies above all in the fact that they help to discover, in concrete terms, the influence exerted by the mode of production on all the other aspects of social life. Socio-economic formations are social organisms which differ from each other; the definite role of the productive forces consists in the fact that they require relations of production which correspond to them, and they exert an influence on the other cultural structures indirectly, through the medium of these relations. But because the development of the productive forces does not automatically result in a change of relations of production, a country with more developed productive forces may, for a certain period, remain at a lower stage of social development. Although the development of the productive forces constitutes the basis of the historical process as a whole, it is the relations of production that determine the specific features of all the social phenomena which distinguish one formation from another.

Thus, the economic basis of society is the aggregation of relations

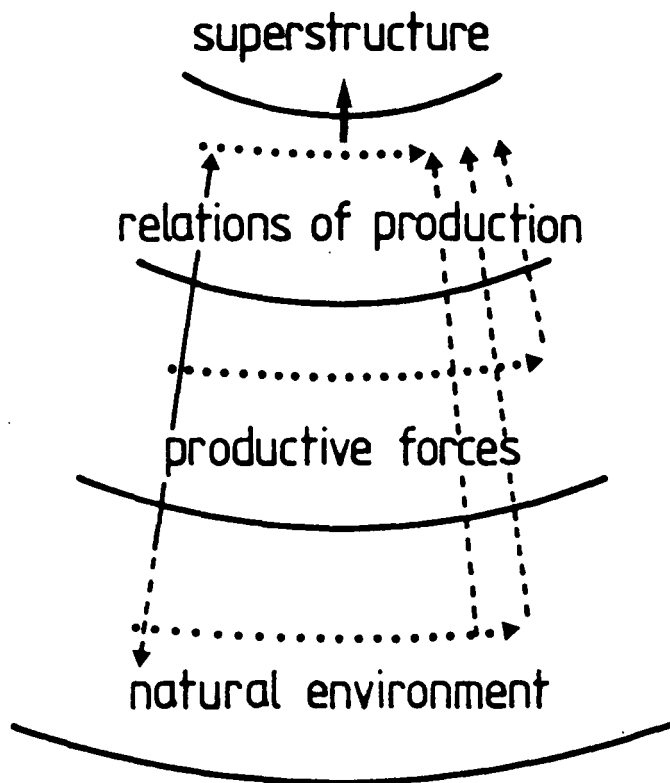


FIG 1.4 : a model of social reproduction. Base is the economic sphere superstructure the social and intellectual sphere.
(adapted from Friedman 1975. Cohen 1981)

of production, relations in the sphere of production, exchange and distribution. This base influences all the other social relations (ideas, views, institutions) of a society which are defined as superstructure. Although the superstructure is made up of heterogeneous elements these have some common features and common laws of development, and this makes it possible to regard superstructure as a whole as being a specific social phenomenon. Thus, the concepts "base" and "superstructure" are interconnected and related to social functions.⁵³ The base is the economic frame of the whole social organism and determines the qualitative expression of each socio-economic formation, while the superstructure characterises the specifics of the social and intellectual sphere in each formation. It must be stressed here, of course, that socio-economic ties of production in pre-capitalist societies, particularly in "primitive", differ essentially from capitalist ties.

The relationships between the bases and the superstructure of primitive societies has a very specific character. The operation of the historical law according to which the mode of production of material life "conditions" the corresponding formative processes in general, is characteristic of the life of peoples at different stages in their history. Primitive society was no exception and developed on the same basis. It was not stagnant, but the rate of its development was very slow.

Superstructure is a Marxist concept with a very broad meaning, embracing the whole of social life apart from its real base, the direct relations of production. The economy is assigned a special place in the totality of social relations, the foundation of which is

the production of immediate subsistence. This does not mean that economic relations are to be strictly separated from the rest, nor that they can be, even in a purely conceptual sense. The unity of social life is so strong that the only possible distinction is a methodological one. Marxist differentiation between base and superstructure is not an absolute distinction between two different overlapping spheres. The point here is not so much to try to demonstrate that the "individual" spheres of the superstructure and their connection with the base are correlative; few would dispute that they influence each other, and there is a multitude of cases where this can be verified. The point is that Marxism differs from all other theories by regarding the various spheres as moments of a whole, (not in the "holistic" sense). That whole is social life which is founded on the production of material life. Every economic era creates the kind of "state" which corresponds to its needs, but this must not be looked upon as a mere formula, but examined in concrete ways. One of the basic principles of the dialectic is the law of uneven development. This diversity (under any mode of production, primitive, feudal, asiatic, capitalist or other) cannot be accounted for, only by the differences in natural factors (climate, "race", geography etc.) but there is also a whole series of socio-historical factors which come into play.

The dependence of ideological superstructure on its material base is generally indirect. Economy creates nothing directly, but it determines the way in which the existing material is transformed and developed. It should be relatively "easy to prove" the connection in cases where the division of labour is not so highly developed;

for example, the connection between a primitive religion or kin structure or nature and art, and the economic relations of a tribe. In Engels' words, "there is no inconsistency in the fact that ideal-driving forces are recognised; the inconsistency comes about when the investigation is not carried beyond these and back into their motive cause - which lies in the economic and social situation."

The primacy of the production for Marx indicates local relationships among productive agents, but the whole social process whereby individuals are allocated to different branches of production, that is, the distribution of agents which determine their sphere in the total social product. This should be particularly important in societies with a low level of development of the productive forces but which, at the same time, have sometimes a highly developed set of social categories of production. In this sense it is understandable why "... still higher ideologies are still further removed from the material, economic basis, take the form of philosophy and religion. Hence the interconnection between conceptions and their material conditions of existence become more and more complicated, more and more obscured by intermediate links; but the interconnection exists" (Engels).

The significant distinction in this connection then is that the superstructure will develop according to its "own" logic as well as in response to the development of the base.

Just as there is an interrelation between the substructure and superstructure in the social whole, so there is a relation between the individual and society, each of these interrelations implying and calling forth the other.

The state is an institution of civil society and not an institution of society in general. On the one hand, it is not a universal feature of human society, on the other hand it is not the ultimate end of society, nor is it the perfection of society; rather than the economic basis, Aristotle held, the Greek city-state is the ultimate nature of man, or the final end of human society. Opposed to Aristotle is the tenet that the state is a passing phase of social evolution. It will be abolished when the conditions that gave rise to it in the first place themselves disappear. The common root in human society is life in the community, in which the opposition of the private and the public is not to be found or is found only in a modest degree. Humanity lived prior to the formation of the state in collectivities whose common interests predominated over individual interests.

The free social individual can only come into existence with the abolition of the division of labour, and the division of labour is fundamentally identical with the division of society into classes. It is not only labour itself, and a particular mode of its division, which remains in existence indefinitely. If labour remains, the time socially necessary for the manufacture of specific goods is still decisive, despite the fact that the products of labour will not take on the character of commodities. Time determines the measure of "freedom" available beyond the necessary material practice. Inversely, time also determines the level of humanization attainable within this practice. This is how the economic role of time as labour-time in a society free from commodity-fetishism is seen in "Capital".⁵⁴

Production (in capitalism) takes place for "social needs".

but it is not regulated socially. Individual capitalists produce what they want and exchange their product for others. In this kind of social order the various products must be reduced, regardless of the qualitative diversity, to a uniform quantitative measure so that they can be compared and exchanged. The products of human labour thus take on the character of commodities, which confront each other in value as quantitatively comparable. (Fig. 5)

Now the significant thing about labour and production in tribal/primeval societies is that it is always concrete, that is, it is always a specific form of labour; male labour, female labour, kin labour; labour power is not a commodity and there are numerous social boundaries to its mobility. For this reason it is not superficial to assume (as Godelier does, 1978) that different concrete labours produce different quantitative values. But the point is that different concrete labours are qualitatively distinct and in a way not interchangeable. This leads to the problem and the question of the process whereby people are assigned in the first place to socially-distinct branches of production. This process cannot be understood in terms of relations of production as narrowly defined by the Althusserians and particularly by the property/possession distinctions taken up by Hinde^s and Hirst. As numerous anthropologists have also pointed out, "rank" in tribal societies does not stem from differential access to the means of production. Rather differential "rank" stems from the social allocation of agents to qualitatively distinct branches of production, that is, their performance in distinct, concrete labour. It is this, and not their ownership/non-ownership of the means of production which determines their share of the social product. Just

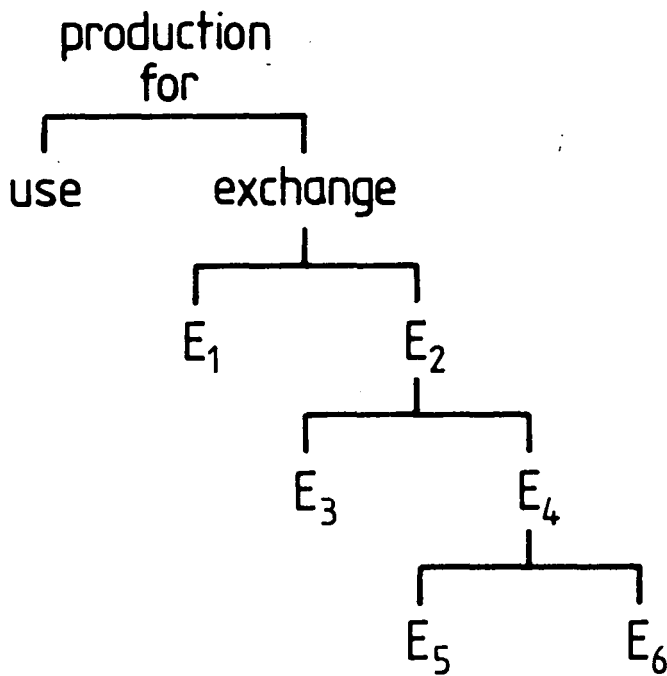


FIG 1.5 (a) A diagram (a) to show production for use and exchange where:

- E_1 = not for exchange value
- E_2 = for exchange value
- E_3 = not for maximum exchange value
- E_4 = for maximum exchange value
- E_5 = not for capital accumulation
- E_6 = for capital accumulation

(which means that in proto-production we have production for use not leading in capital accumulation - but with exchange under class societies and more under capitalistic relations, we have exchange gradually leading to different forms of exploitation and capital accumulation, thus creating unequal structures within society, unequal personal relations, commodity production etc.)

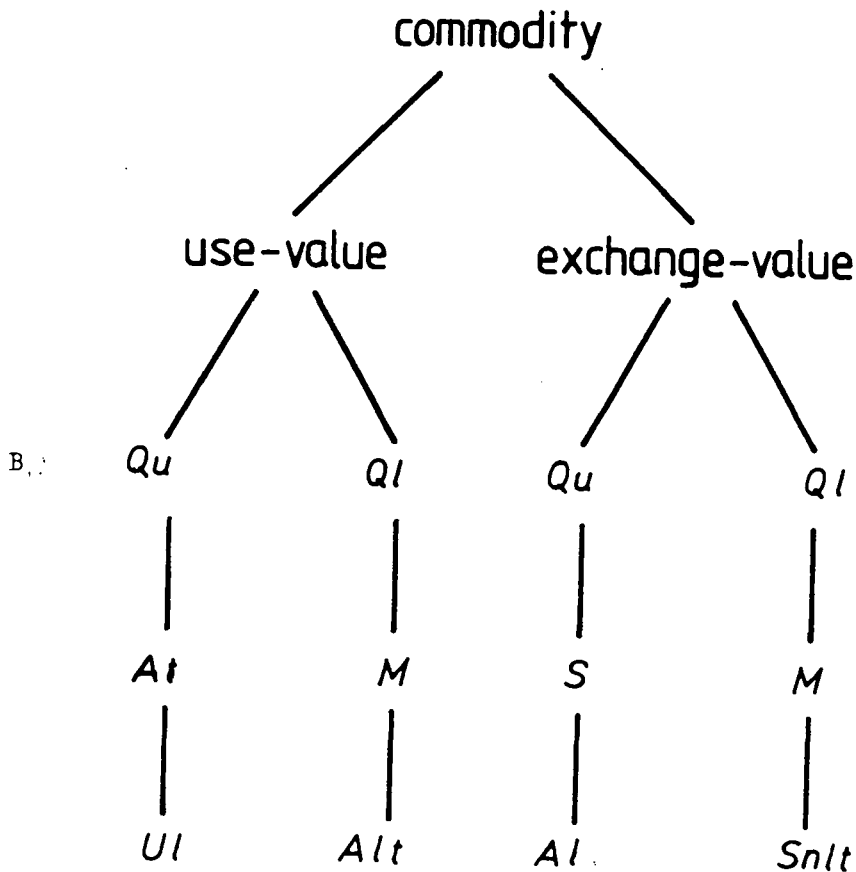


FIG 1.5 (b) The two aspects of commodity use-value and exchange value; use-value has two aspects Qualitative and Quantitative (Ql, Qu). Exchange-value has two aspects as well Ql, Qu, which are really those of value for which exchange value is only the form of appearance. But then we have different operating mechanisms leading to the aspects shown above (where At = attributes, M = measure, Ul = useful labour, Alt = actual labour time, S = substance, Al = abstract labour and Snlt = socially necessary labour time). The key distinction to see is that between Ul that produces commodities as use values and Al that produces them as values. The direct measure of Alt can only be the measure of Ul and not that of value. Between that useful labour time and value lies social mediation. Thus, while the actual amount of Ul required to produce individual commodities of a given type may vary in different places, value expresses the social average which will give the "normal" conditions of production prevalent in any given period (as always with Marx the social determination is central) (adapted from H. Cleaver 1979)

like the so-called internal categories, so these "tribal" distinctions are at the same time different, concrete forms of labour. To argue a) that this social allocation of agents to different "branches" of production cannot be understood in terms of relations of production or b) that they include different sorts of "investment" and "exploitation", means that Marxists cannot recognize the direction which might be taken for a Marxist analysis of primitive and/or palaeolithic societies.

If it is approached from a dialectical materialistic perspective, the analysis of prehistoric socio-economic organization acquires a "new" aspect. It is important to stress that the "task" lies not in the formulation of some common theory of pre-capitalist formations. That cannot be, since each pre-capitalist formation has its own laws of function and development, distinct from those of other formations. But, similarly, there is unlikely to be any doubt as to the qualitative, basic difference between the classless, primitive socio-economic formation and the antagonistic class formation that replaced it. This is why historical materialistic analysis can never consist of "divisions", each of which is applicable merely to one formation or even to a group of similar formations.

Another point is, that so far as it concerns certain interacting "elements" within society, it is necessary to recognize the dynamic transformation of their process. If we take into consideration that certain experiences, meanings, or practices are "residual", that is, they have been effectively formed in the past, but are still active in the present - albeit in an alternative or even oppositional relation, the "exegesis" of the past from the present is possible and

can make sense. Thus cultural emergence in relation to the emergence and growing strength of a class, is always important and complex. In the case of pre-capitalist cooperation we can speak of it from the perspective of capitalist cooperation: it is based on the one hand on ownership in common as the means of production, and, on the other hand, on the fact that in those cases all the members were in direct daily contact with one another remaining close to their tribe or community. Correspondingly, what Marx called the natural division of labour within a tribe or a family is based on differences of sex and age i.e., on a purely physiological foundation.

The division of labour gradually begins to receive a truly social basis to the extent that individuals, the particular organs of an abstract, being, a "directly interrelated whole",⁵⁵ become progressively separated from each other. The introduction of the exchange of products with communities in other places is the reason for this "dis-integration" of the natural connection between men. The exchange of products is made possible by the fact that different communities find different means of production and nourishment in their "natural environment": it is the spontaneously developed difference which, when different communities come into contact, calls forth the mutual exchange of products and the consequent gradual conversion of those products into commodities.⁵⁶ In this way, the connection between individuals is restored, but as a socio-historical connection. However, as long as the greater part of production is for the needs of the community itself, there is scarcely any community-production. A particular division of labour, once "legally" fixed, continues to operate over great periods of time, and the community leads, as it

were, an "unhistorical" existence. This character of pre-bourgeois history is made particularly clear in that theoretically important section of the "Grundrisse" which deals with the economic formations which precede capitalist production.⁵⁷ As this section shows, the dialectic must become absorbed into the actual writing of history if it is not to decay into an empty schema.

As his point of departure, Marx took the historical conditions for the formation of the capital relation. Capital presupposes on the one side, free labour and its exchange against money, which is thereby reproduced and converted into values, and on the other the separation of the individual, from the natural immediacy of the community. In Marx's view, this original natural immediacy was based on the similarly natural "unity of labour with its material prerequisites".⁵⁸ In pre-capitalist societies the relationship of the worker to the objective conditions of his labour is one of ownership... the individual is related to himself as proprietor, as master of the conditions of his reality. The same relation holds between one individual and the rest..either in the form of joint ownership...or when the others are independent owners coexisting with him..".⁵⁹ The individuals are however "labourers", since they are active as members of a community which is endeavouring simply to maintain itself and not to create value.

Since Marx proceeded from the assumption that pastoralism was the first form of maintaining existence, the tribal community appeared to him to be the precondition rather than the result of the (initially, of course, temporary) appropriation of the soil. Once men become settled, the degree to which this original community is modified is

dependent upon a large range of external natural factors, as well as on the natural and anthropological characteristics of the tribe itself. Whether they are nomads, hunters or agriculturalists, it is always " ... the community of blood, language and customs"⁶⁰ which forms the most important prerequisite for the appropriation of the "objective conditions of their life". This practical attitude of the individual, who, (as opposed to the proletarian of a later era) never appears merely in abstraction as a labourer, but always has an objective mode of existence insofar as he has the land at his disposal, is mediated from the outset through his existence as a member of a whole, already more or less subject to history.

1.7 "Industrial" Relations in Prehistory

When man emerges from his mythical subjection to nature, his labour casts off its first, "instinctual" form. In place of a utilization of nature solely through the medium of the organs of the body, there emerges conscious production directed to a purpose. This higher unity of man and nature, mediated through the tool, was what Marx understood by the word "industry". Primitive tools are copies of human bodily organs. Later tools depart from this model, develop their own forms, "de-organize" themselves but remain bodily organs of man.⁶¹

It is the work of history to discover the various uses of tools, said Marx. The tool is a portion of nature which has already been incorporated by man. With its help progressively more and more objects are transformed into results of subjective activity, more

and more areas of nature are opened up. Consequently the tool undergoes considerable changes in the course of history of technology; from being just an implement of the human organism, it expands and multiplies into the implement of a mechanism created by man.⁶² There can be hardly any doubt that the most basic and abstract concepts have arisen in the context of tool making.

Hegel as well as Marx was aware of the historical interpenetration of intelligence, language and tool, which connects man's purposes with the object of his labour. The labourer is not in an immediate connection with the object of his labour (unappropriated nature) but with the instrument of labour, which is identical with the tool.

Marx defined this view in the following way: "the instrument of labour is a thing, or complex of things, which the labourer interposes between himself and the object of his labour, and which serves to conduct his activity onto it. He makes use of the mechanical, physical and chemical properties of some things in order to set them to work on other things in accordance with his purposes."⁶³ If we keep to that definition, we can distinguish three forms of tool, according to the role played by each of them in the labour process. First, the tool can maintain itself in its identical form, secondly it can enter materially into the produce of labour, and finally it can be completely consumed without becoming part of the product of labour. All human technology thus, arises out of natural materials, on a natural base, and in a natural context as an effort of man to survive and to realize his powers. Despite his awareness of the historical role of the tool, Marx had a far lower estimation of it than Hegel. He had no intention of deriving any arguments against the satisfactions of

the senses from their transitory nature. He was wary of fetishising the tool in relation to the immediate use-values created with its help, as Hegel has done. The latter's formulation presupposed a situation in which men were turned more and more into appendages of their own uncontrolled productive forces.⁶⁴ Although it had an element of truth in it, in that most tools remain the same in use, and are foreign to their product, Marx made the following implicit reply to Hegel in "Capital". "The instruments of labour properly so-called, the material vehicles of the fixed capital, are consumed only productively and cannot enter into individual consumption because they do not enter into the product of the use-value, which they helped to create, but retain their independent form with reference to it until they are completely worn out."⁶⁵

Lenin pointed out⁶⁶ that Hegel was a precursor of historical materialism because he emphasized the role played by the tool both in the labour process and in the process of cognition. Just as Hegel overcame the metaphysical rigidity which dominated all pre-dialectical conceptions of the problem of freedom and necessity, so also he dissolved the reified opposition between teleology and natural causality. Marx took the view that the cunning of man consisted in his "use of the mechanical, physical and chemical properties of some things in order to set them to work on other things in accordance with his purposes." In view of this, it is not surprising that Marx also wrote of the "neutral product" in the "Grundrisse" when he wanted to express the fact that in the use-value the material of nature and human labour are bound up together, but at the same time remain external to each other.⁶⁷ Even when dealing with the experience of

natural objects as such, their natural character is determined by their contrast with the social world and is to that extent dependent on it. Men use largely the same ideas to realize their own capabilities by the practical construction of an objective world and to comprehend that world theoretically. The problem of knowledge - if it truly exists by itself - cannot be separated from a whole ensemble of more or less well-defined historical conditions. There is no such problem until the concrete, practical functions of it have been exercised; and this exercise does not occur by chance or in itself, but in the situations which give it form. Every physical action that men undertake teaches them that they are dealing with real natural things and not with "aggregates of sensation". This is how we understand Lenin's methodological remark that, in the dialectic, the complete "definition" of an object must include the whole of human experience, both as the criterion of truth and as the practical indicator of its connection with human needs.⁶⁸

Human products exist in a network of norms, of social rules of use (generally having the character of "customs") through which they acquire their identity, their meaning, and which circumscribes the proper aim and mode of their employment. And since the object is effectively created for this use and materially adapted to it and only to it, the norm is, as it were, embodied in its physical frame. It is in this sense that man-made objects are objectifications of human abilities: they materially represent modes and ways of action which each individual must "appropriate", (in the sense of interiorizing the corresponding rules of use), at least in respect of the most common elements of his environment, to be able to lead a (for

his society) normal human life. So, as against nature, social life, even in its most elementary forms, appears as patterned by norms, and the products of labour function as material vehicles of these norms.

Only because man lives in such a humanized world, because the human abilities and needs, evolved in the past, confront him from his birth onwards in a ready material form, and because he has at his disposal in this objectified fashion, the results of the whole preceding social development, and only because of all this, he is able not to begin anew, but to continue this development at the point reached by the earlier generations. In the process of "appropriation" of humanized objects (which constitutes one of the main dimensions of socialization) the individual transforms into living-personal needs and skills the historically created social wants and abilities objectified in the elements of his milieu, and in this way a material-practical transmission of tradition is realized in society, which constitutes the basis of historical antiquity and at the same time renders social progress possible. So it is that work only as objectification of human essence creates the possibility of history as such. Men have history because they must produce their life, in a definite way.⁶⁹ Work, however, changes not only the object at which it is directed, but also the labouring subject itself; it transforms not only external nature, but human nature also. Not only the objective conditions change in the act of reproduction, but the producers change also, in that they bring out new qualities in themselves, develop new powers and ideas, new modes of intercourse, new needs and new languages.

"The appropriation of these forces (i.e. forces of production) is itself nothing more than the development of individual capacities corresponding to the material instruments of production. For this very reason, the appropriation of a totality of instruments of production is the development of a totality of capabilities in the individual themselves."⁷⁰

The historically first production of an object is usually, as far as subjective skills are concerned, not yet adequate. usually, it is due to "fortunate accidents", to a conjunction of circumstances in which the object can be created by the help of extant "imperfect" capacities.

This "accident" can naturally occur without any human intervention, but may be on a higher stage - the result of active human exploration, too. Only in the regularly recurring process of production can man master his own form of activity, the "play of his own forces", and develop in himself the corresponding skill as "an integral ability."⁷¹

The universality of man in this sense characterizes only a tendency "inherent" in work as a specifically human activity. This philosophical concept of work is not reducible to merely technical action, but designates the material activity of human self-transformation existing always in some social form. And it is this social form in its historical concreteness - i.e. as some historical type of social relations of production - that determines the mode, the rate and the limits of realization of this tendency, in each historical epoch, within any given socio-economic formation. Marx definitely stresses that it is the relations of production that "determine the whole character and the whole movement of production."⁷² They do not simply

accelerate or decelerate, "promote or hinder" a supposedly irresistible process of "technical" development, but they define the real social conditions of its materialization in general. (Fig. 6)

Marx views work in a two-fold dimension and significance. He examines human productive activity primarily as a process of anthropological-sociological character, as that of the self-creation and self-transformation of men in the course of history. He also regards work as a process of natural-evolutionary character as the highest form and type of the evolution of nature.

The two aspects of human sociality - communal character and socio-historic determinateness - reciprocally presuppose each other. The historically created and objectified material and mental powers can be appropriated by the individual only within a human community, through the intercourse with other human beings. Marx does not stop at such general, philosophical descriptions of the social character of human material life activity. What he aims at, is first of all to understand the socio-productive life of a historically given concreteness, that is, of a given population,⁷³ simultaneously as a social totality capable of self-reproduction, and as a moment in the process of historical development. Marx regards the economic structure of any society as a system of relations and institutions ensuring the continuous reproduction of the material elements and conditions of its own functioning. In each viable society there must be first of all social mechanisms securing the constant recurrent unification of the basic potential factors of production, of its objective and subjective conditions; the unification of the means of production (instruments and materials of labour, natural resources included)

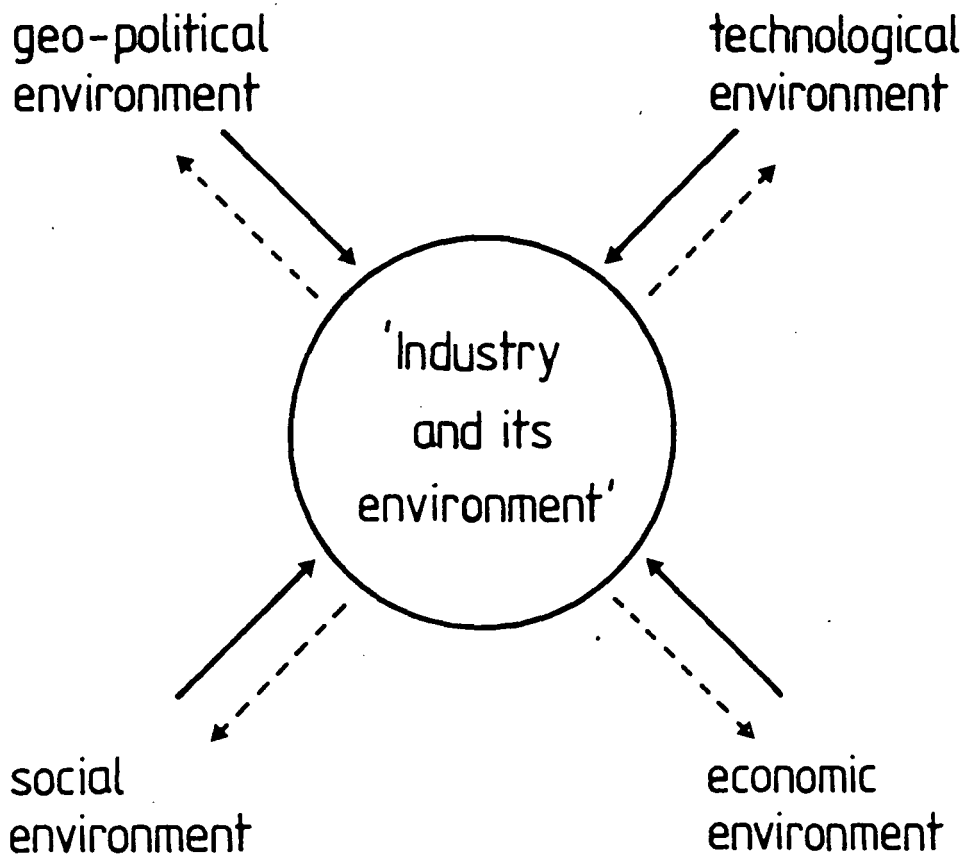


FIG 1.6 : a diagram to show industry and its environment (for any given period), taking under consideration four main factors only.

with the active, living ability of labour, existing as a labour force of a given historic specification and embodied in the population as a whole.

The social mechanism which realizes this connection and unification of the potential elements of production process equals the relations of production. Their core is constituted by a "distribution of the elements of production which precedes the distribution of social products and is presupposed by it",⁷⁴ by a distribution which is comprised within the process of production itself and determines the structure of production.⁷⁵ This distribution has a two-fold character: it means the distribution of the means of production among the different groups of population and the distribution of the members of society among the great "classes" of the means of production corresponding to the basic social branches and kinds of production and economy in general (relations of division of labour).⁷⁶ Through this two-fold distribution, the population, the living totality of society becomes divided, stratified into basic social groups, so that the individuals belonging to them acquire thereby a definite social character; they become particular historic agents of production. Thus, men's relations to things as objective factors of conditions of their production process mediate the social relations among men. And through this mediation these things themselves acquire some definite socio-economic quality. In the real process of social production the objects have not only a "material content" a socio-historically created utility, but a social form too. So, we may perhaps say that in social life human products function not only within a network of rules that define the mode of their "technical use", but also in a network of social relations which define the

conditions and character of their social employment. Of course the social character of man is not confined to the sphere and acts of production alone.⁷⁷

Sociality characterizes the whole individual, permeates all the forms of life activity. Marx analyses the historical processes as a result of which there emerge specific and relatively independent institutional spheres of social activity. The examination of the interrelationship of these spheres with that of material production constitutes one of the most basic aspects of the materialist conception of history, which it is not possible to discuss in detail here. What one has to underline once more is that these spheres cannot be conceived as something external to the individuals involved in them. They develop their own, historically changing norms, they make demands on the individuals concerned which are, again, to a historically and socially variable degree, internalized, accepted or actively rejected by the persons involved in, or affected by, these activities.

These "distinctions" and relationships have different significance in different periods. It is in this way that in the Marxist conception, historical development appears as a process in which man progressively becomes a universal natural being and within the same process there appears a universal social being; the life of every and each individual becomes dependent upon the activity of a growing circle of other individuals, that is the community in the broader sense.

Marx's intended meaning is this: every interaction between man and nature which goes beyond the embryonic animal stage occurs within the framework of a definite social form, but not every one of these

forms is a "society", in the sense of bourgeois society, society par excellence. He therefore avoided using this concept to refer to pre-capitalist relations. He used instead the terms "community of natural origin", "kinship group", or "tribe". The distinction between what is "naturally" given and what has "historically" evolved may perhaps be valid for the individual phases of pre-capitalist history, although Marx repeatedly pointed out that all naturally given forms are also the "results of a historical process".⁷⁷ However the distinction between Asiatic despotism, the slave economy of classical antiquity, and medieval feudalism (three forms of social relationship which are all determined by land ownership), fades into insignificance in face of bourgeois society, whose emergence constitutes a decisive rupture in world history. Like Hegel's forms of nature, the different forms of the pre-capitalist community stand beside each other as "indifferent", "unconnected" forms of existence. Only through the eyes of theory does the modification of a form, without itself arising from that form, prove to be its higher stage of development. For Marx, therefore, the course of history is far less linear than has commonly been assumed; it does not proceed in accordance with a uniform interpretative idea, but is composed of constantly changing individual processes.

The bourgeois social formation has a methodologically decisive role in dialectical materialism in that it provides the starting point for disclosing both the past and possibilities of the future. Marx was the very opposite of a simple evolutionist. In itself, the historically higher stage is grounded in the lower; but the qualitative distinction between the lower form and the higher form

is fully developed and has already become the object of an immanent critique: "the anatomy of man is key to the anatomy of the ape." But the intimations of a higher animal in lower ones can only be understood if the higher animal is already known. The bourgeois economy furnishes the key to the economy of feudal, ~~the~~ to classical etc. But not with the method of those of the economists, who erase all historical differences and see bourgeois society in every social formation.⁷⁸ The so-called historical development rests on this basis, that the last form considers its predecessors as stages leading up to itself, and always conceives them one-sidedly ... as it is seldom ... capable of self-criticism Thus the bourgeois economy first came to understand the feudal, the classical and the oriental economies as soon as the self criticism of bourgeois society has begun.⁷⁹

1.8 Unity and Diversity of the Historical Process

The process of progressive broadening of the range of human activity at the same time coincides - with regard to the general trend of human history - with a process of the growth of men's autonomy in relation to their immediate environment and social group. The individual becomes and is a human individual precisely because he actively engages and participates in this process, and this is possible only because he has appropriated some of the objectified results and achievements of previous human progress within the limits of his time and on the scale of his own social possibilities. Thus the real unity of the human species itself cannot be truly comprehended apart from

this historical process, but only in and through it.

So if we mean by "anthropology" some extra-or suprahistorical (or even simply ahistorical) characterization of human traits, then Marx has no anthropology, and he would deny the usefulness of such an anthropology for the understanding of man's essence.

If, on the other hand, we would understand by anthropology an answer given to the question about human essence, an attempted resolution of the question: "what is essentially man?" then there is a Marxist anthropology, only it is not an abstraction from history, but rather an abstraction of history itself.⁸⁰

Thus Marx's conception is diametrically opposed to all those trends of thought which sharply divide and counterpose anthropology and sociology or archaeology which set the study of man's essence in opposition to the socio-historical study of man. For Marx, the "human essence" lies precisely in the essence or inner unity of the total social development of humanity.⁸¹ The bearer or subject of the "human essence" for Marx is not the single individual, but human society apprehended in the continuity of its historical change and development. This fact is utilized by all who - like K. Popper - accuse Marx of the hypostazation of society into a super-individual.⁸² Nothing could be more unjust than this charge. In the Marxist conception society is nothing else but the totality of the actual relations of real, concrete, historical individuals; it could not therefore exist externally to or above those individuals as a kind of super-entity composed of them as subordinated elements, nor as a value independent of, and transcendent to, them. The separation of society as such from the life-activity of the individuals who constitute it and the

opposition of one to the other is for Marx a typical ideological illusion occasioned by the realities of the historical period of alienation; it is the distorted reflection of the facts of alienated society.⁸³

As Marx emphasizes, individuals always start with themselves.⁸⁴ But as he also points out, society is not merely a mechanical agglomeration of the individuals who constitute it. "Society does not consist of individuals but expresses the sum of interrelations and relations within which these individuals stand."⁸⁵

From this perspective history appears not only as technological development but also as an anthropological progress. But thus far in history this process has not meant, simultaneously, the emergence of increasingly universal and free individuals. From the point of view of individuals there is no unified and unequivocal criterion with the help of which we could comprehend history as "development". First history is "development", even if we consider it as a "succession" of individuals, understanding this term in the broad sense, in which it designates simply all irreversible processes. Further, even in prehistory there can occur (especially in the "progressive" phase of a society) shorter or longer historical periods when the conditions are created for a relatively many-sided internal "development" for relatively broad groups of individuals.

Still the above generalization stands, especially if we consider not the representative but the average individuals of successive epochs. Far from the individual's point of view, we cannot characterize the historical process with a single definite direction, due to its contradictory tendencies. This is perhaps what differentiates

mankind's "prehistory" from his future "actual" real history. For the concept of prehistory which traverses Marx's whole life work, is not to be understood as a simple metaphor. The process of human "genesis" is, according to Marx, not completed with the formation of Homo as a biological species, a species to which organisms with definite, constant and identical biological and anthropophysical characteristics belong. Social genesis is the process of prehistory which at the end, gives rise to the human species as mankind, as a real and conscious unity of interacting and interconnected individuals on the one hand, and the concrete, many-sided and "multidimensional" human individuality which truly represents the historically achieved stage of development of the "genus" on the other.⁸⁶

This process simultaneously appears as the transformation of all those determinations of individuals which, although in themselves social, in earlier stages of development appeared to them as unchangeable natural traits inseparable from their concrete personality and external to social determinations which they, themselves may alter through their own forces. This is undoubtedly a process of "depersonalization" but it creates the subjective preconditions for man's mastery over his own social relations and determinations. It means that the changes in social life are to be understood as "self-movement" from the inner dynamics of society itself, and not the mechanical dependence of social activity on the ready-made external material conditions, and thus it does not postulate but even excludes a fatalistic predetermination of the total historical process.⁸⁷ Every generation acts "under determinant circumstances" on the grounds of the forces of production, institutions and cultural

values inherited and appropriated from the past. But every generation also modifies and transforms these factors and conditions, if only because these conditions have to be constantly reproduced by human activity. (Fig. 7) There is always a definite scope of action given by the objective conditions of life, a range of developmental possibilities and alternatives. Men themselves choose in their actual practice among these possibilities. The realization of one or another of these alternatives is determined by the entirety of concrete human activities.

What follows from this is that neither the actual course of history nor the developmental tendencies of its particular epochs can be comprehended through some sort of abstract formula, but only through an analysis of actual life relations, socio-economic conditions, and forms of activity growing out of them.

1.9 Ethnographic Interpretations: Possibilities and Reality

For a study relying on the historical-materialistic method⁸⁸ the data provided by ethnography constitutes the material from which one attempts to extract the general traits which will be employed for the reconstruction of particular stages of social development, irrespective of the time and the location of the society in question. This allows for comparison and correlation between various peoples who represent one and the "same" historical type. It is possible therefore (although this leads of course to supplementary problems) to group under one "type", the primitive hunter-gatherers, aborigines of Australia or the Kalahari desert, the South-Indian Kadar and the Eskimo, for in

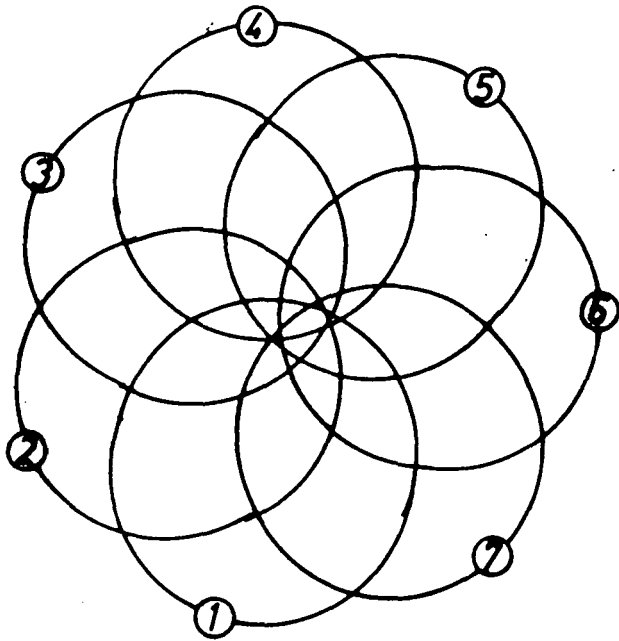


FIG 1.7 : Factors that can be modified by man and their interrelationships. where 1 = logical consistency, 2 = laws of nature, 3 = scientific knowledge, 4 = technological knowledge, 5 = physical resources, 6 = physical "acceptance" and 7 = political legal and moral structures.

spite of the fact that these societies are located in different natural and geographical environments and in different socio-historical conditions, they nevertheless have many aspects in common in their socio-economic relations.⁸⁹

By similarity of the socio-economic relations of these societies, we refer to their economic structure, forms of property, division of labour, the role of the community as the basic economic cell of the society, its composition, the relations between communities and the families which compose them, and the dependence of the size of the population of the communities on ecological conditions, or the regular correlation between seasonal environmental cycles and seasonal migrations, population size. These are the main indices of the characteristics of the socio-economic base of these societies and are not superstructural or casual randomly selected phenomena. Consequently, when we say that these societies belong to a historical type, we mean that they represent human society at a particular level of socio-economic development, or a particular stage in their formation. This makes possible the discovery of general laws of the socio-historical process; and on this basis it is possible to reconstruct the past of these societies that have been through a "definite" stage of social development, on the assumption that, to a certain extent, the same laws were applicable then as now.

In principle there seems to be no reason why contemporary "primitive" societies should be substantially unrepresentative of those in the past. The concrete application of historical materialism, however, comes up against definite difficulties arising from the question of the comparability or congruence of the compared entities. In recognizing the character

of the relations that exist between the economic base and the socio-ideological superstructure, one must also recognize that the relations to be found in today's "aboriginal" societies clarify the relations that existed in prehistory. - One of the problems arising is that one would expect greater diversity in economy and in social organization than occurs in modern representatives of this way of life; interpretations based on contemporary hunting and gathering societies, for example, must be attempted with caution. The reason is, that it has been shown that most extant hunting and gathering societies do not exist in any "palaeolithic purity", but have been considerably influenced by capitalist expansion in one way or another.⁹⁰

The singling out of proto- or para- or ethno-history, should be transferred on to another level. Being part of total historical science, the history of primitive society is subdivided into history dealing with the period ending with the emergence of most ancient civilizations, and the history of societies coexisting with the class society. Belonging to similar types of primitive societies the "preclass" and "epiclass" societies differ in the degree of the "relation" of their development. This differentiation allows one to avoid a possible ambiguity of the word "primitive" and is clearer, as regards notions and functions; it allows for comparisons of socio-economic relations along the most general lines, particularly and most importantly the relations of production and in this respect changes in the whole social structure.

To reconstruct the social laws, the processes, the mechanisms, whereby society in all its variations emerge, and the nature of the social forms, involves a delicate interweaving of theoretical and

empirical considerations. Archaeological and ethnographic data on pre-class societies are spotty and ambiguous. Archaeological data on all but the broad outlines of socio-economic organization are generally suggestive, not conclusive, and to find records of a non-literate society means, of course, that it had already come into contact with, and hence been in some way affected by, the relations of commodity production. A basic dilemma, therefore, confronts the attempt to reconstruct the early stages of human history from the evidence at hand. Reconstructing fully communal societies as they functioned before becoming involved in trade and warfare with Europeans or with the state-societies that existed elsewhere in the world, necessitates making certain assumptions about the social and political forms that are concomitant with living at simpler technological levels.

Yet reconstruction itself is needed to demonstrate the correctness of the theoretical assumptions. Instances where data on pre-class social relations are "clear" are therefore of great importance. Where materials are available for ethnohistorical research into a given primitive culture, they reveal fundamental changes of the type that have been taking place independently in various parts of the world, or have been developing rapidly during recent centuries of colonial rule, the breaking down of the corporate kin group into individual families and the individualization of property rights, the down-grading of women's status, the strengthening of rank, and the usurpation of powers by chiefs, in short, the basis for class society.⁹¹

An essential critical point to note here seems to be that the greater the distance that separates a social or cultural phenomenon from the sphere of production, the less are the possibilities of

predicting this phenomenon with certainty. However, it is possible to predict the form of social relations which are "functionally" related to production and which are dependent upon the level of social development, as for example the form of the community which is the basic unit of production in primitive society.

There is another factor to be reckoned with. The very fact that certain "tribes" have lagged behind in their development poses the question whether they may be identified with the primitive tribes of the "old world" which advanced at a "higher" rate and, therefore whether the geographic and historical factors which, among other things, caused "stagnation" did not play a significant role. This is connected especially with the less "developed" tribes of hunters and gatherers and even - under certain circumstances - with pastoralists-agriculturalists. We have already discussed that one of the factors conditioning the specificity of the development of diverse regions was the difference in the speed of their evolution. Whether or not primitive history is "stagnant" or followed simply a slow rate of development, depends upon one's understanding of the term stagnation. Absolute stagnation is to be found neither in nature nor in history. Primitive history lasted at least two million years, whereas class societies have existed for just five thousand years. The evaluation depends on the criteria of comparison and on whether we are speaking of primitive society in its prime or of its decline. Such societies, it is true, degenerated in part and may be regarded as "deformed". But the view of economic-cultural "types" opens up possibilities for comparing societies of a similar type, regardless of the area of their location and cultural continuity; they are not the equivalents therefore, but merely the

analogues of primitive ones.⁹² And since the ethnographic method is restricted by limits of time and of subject matter, the method of survivals is an important supplement to it. It may be extended to all the stages of the history of primitive mankind and used for the study of super-structural phenomena (institutions and ideas) to the same extent as for basis phenomena (those pertaining to the economic sphere).

It appears that there are two main points of view within the use of the 'survival' method of interpretation. One, already mentioned, is that hardly anyone will find such survivals of the past which would not undergo a change through conditions of a later period or become the elements of the system which has absorbed them; and the other possible one, a survival of the past which has retained its old form but acquired a new content.⁹³ In this case the analysis of the outward specifics alone offers certain opportunities for the reconstruction of phenomena of previous historical periods. Even if we cannot affirm that in a certain palaeolithic society there existed a certain kinship system (e.g. matrilineal or patrilineal because the functions of kinship are not as "closely" related to production as is the community and they are primarily the means of organization of family reproduction etc.), nevertheless we can assert that the community was the main structural unit of pre-agricultural society at any period and under any circumstances. In all cases, a certain regularity is found in its structure, population, relative mobility, the form of sexual and age division of labour, these being determined by the interaction of production and the natural environment as well as the conditions of production. It is possible thus, to "predict" in an approximate way

the form and magnitude of the life of a hunting community, having in mind that this method is far more "effective" when applied to socio-economic, rather than to socio-ideological structures.

Any particular human society represents one concrete historical form of existence of a particular social formation. The formation and the single society are as essence and phenomenon, the general and the particular, in which and through which only what is general can exist. As with any phenomenon in the material world, social organisms have both general generic features and specific individual features. This is why any present-day individual society, is a society of a particular type, one of the many societies of a given type, that is of a given social formation. Hence in the analysis of a current society studied by ethnography, it is possible to find not only unique and particular traits of its development but also the general, typical features that create the possibilities of comparing it with societies of the same type in the past.⁹⁴

At any period, the internal mechanism of societies of a given type are always based upon concrete laws, which are "restricted" to the societies of the type in question; but the manifestations of the internal laws of societies of the same type can differ as a result of concrete causes and this diversity is present even between societies of the same type.

These "ensembles" of elements, perhaps more than any others, are crucial for understanding why Marx and Engels attached so much more significance to the re-analysis of history and anthropology and they gave an ever-growing importance to the study and understanding of pre-capitalist societies. The rewriting of history was not so much a

matter of starting again, but of making use, for a new purpose, of knowledge which was already available, whether in the work of philosophers like Hegel, economists like Ricardo, biologists like Darwin or anthropologists like Morgan. This new use, meant a severe criticism of the earlier knowledge, since Marx believed that the studies he was using had originally been made for exactly the opposite purpose to his own: that they had been in order to justify the oppression which he saw as the core of the capitalist system. This was particularly true, Marx felt, of economists; but he was to show that it was also true of some anthropologists. Naturally Marx started by explaining the historical mechanism and inner working of the social system which dominated the conditions of the working class at the time he wrote on capitalism. However, in order to expose the nature of capitalism, Marx first had to show that capitalism is not based on some eternal, immutable truth, but is the product of a long history; for example, the law of supply and demand was not simply a matter of eternal logic, nor were such rights as that of private property self-evident truths, but rather they were the product of particular historical circumstances. Those circumstances had brought about the capitalist system and also created the concepts on which it was based. In showing capitalism and capitalist values to be the creation of a moment of history, Marx negated the transcendental claim of capitalism to be the only possible natural system of the "civilized" world. One obvious way to demonstrate that the capitalist system was a specific historical product was to show that it was not always so.

It is in this general perspective, aimed to analyse the links between the relations of production and the nature of the systems in

which they were located. that Marx and Engels turned to the available anthropological information of pre-literate peoples. assuming that since these were the most distant from the capitalist system they would manifest the most "different" social relations of production.

They particularly looked for evidence relating to the topics they focused on, that is, mainly the relationships existing between people engaged in the process of production, as well as the property and the family.

Marx's attitude to the numerous anthropological works which came out between 1860 and 1880 was in part one of "shared enthusiasm" for evolutionary theory, but also in part one of suspicion. This suspicion had two main causes: he felt that many of the anthropologists underrated the significance of thought, and secondly he suspected the political motives of at least some of them.

In that respect it is understandable why - amongst other things - Marx and Engels attached so much more importance to the work of Morgan than they did to the work of other anthropologists. Morgan was an idealist and utopian but also anti-aristocratic and communitarian in his abstract opposition to property; he did not conceive that the modern social system is in a "crisis that will end only by its elimination", and he never proposed concrete means to carry out the programme of abolishing that which had aroused his distaste. Yet, Marx and Morgan, in different ways, called for the revival of the archaic commune with regard to property, equality and the organization of society.

Here of course we have to refer to the periodization discussions. The problem of periodization has occupied thinkers from ancient times

to the present. No periodization is capable of embracing the entire variety of historical development of peoples, and of taking account of all its variants and objective logic of development.⁹⁵ Marx and Engels were quite aware of that; they consider the classification not as an end but as a means leading to the critique of the social process of social relations, and to the changing of society (by this critique).

Marx's periodization is not a broad social classification but an economic one. His discussions did not have as their end the positing of the epochs, which are forms of society but, through their depiction, he intended to reach through to the process which precedes the formation of the capital relation and its original accumulation. This is a dialectic of social "statics" and dynamics. There is nothing fixed and eternal about labour in society. The method that Marx followed is set forth in the introductory chapter and in the beginning of "Capital" (as well as in the "Grundrisse"). The method is not to allow the economic categories to succeed each other in the order in which they are historically determined, but rather in the order in which they appear in "The Critique of Political Economy" is determined by the relation that the categories bear to each other in the society. Marx had in view not the forms and stages themselves but the process of social labour (and capital) in society.

Morgan seems to suggest, however tentatively, reasons why one stage should change into another in the idea that the processes of evolution themselves lead to the destruction of the stages they produced. Morgan was the only one of the nineteenth century anthropologists who, like Marx, was interested in what led to the transformation of one social system into another, and in what led to the break-up of

past systems. The major shortcoming of Morgan's periodization lies in the fact that it was not a periodization of the history of society itself. The scepticism of Marx, relative to the use of the Iroquois data⁹⁶ for example, as a model for interpretation of other societies, constitutes a further movement away from the fixity of categories, and carries the general loosening of the stages of evolution both forth and back in time.⁹⁷

The development of productive forces is certainly the basis for the development of society, but does not coincide with it. Even major turning points in the evolution of productive forces do not lead automatically or at once to a change in the relationships of production or other social relationships.⁹⁸ As for less significant changes, they may be merely accumulating, lead to changes in social relationships, first in the economic and then in the ideological field. It is not change in the productive forces, considered alone, but the more or less significant reorganization of the economic relationships of production, which in their totality constitute the basis or foundation of society, the criterion for the onset of a new stage in the development of society. Changes in the material relationships among men, of which the most important are relationships to the means of production, result in change in all the others, which arise as a superstructure upon the former; i.e. brings about the transformation of society as a whole.

1.10 Historical Materialism and the Dynamics of "Primitive" Society

The Marxist theory of society is based on recognition of the primary importance of production. It is natural, then, that a "typology" of modes of production should be the foundation of the classification of social structures and periodization of the historical process. (Table 1) Men begin to differentiate themselves from animals as soon as they acquire the ability to produce what they need to live. As they produce these means, they reproduce the social relationships that have developed. The methods employed to acquire the means of subsistence determine the stages in the evolution of social structure. Any production, even the most primitive, presumes a corresponding organization, division, and differentiation of labour. But the character of the organization for production, and consequently of all economic relationships and of social relationships as a whole, differs widely. At this point though, a question arises. Is the "concept" of the primitive society justifiable, and is it right to single out the primitive society as a specific social-economic structure in human history? In general terms a Marxist answer entails that the primitive society is a part of human history, and that the process of production (including relations) is the "economy", the mode of existence of humanity and the foundation of social life. The dominant relationships in all pre-capitalist societies were 'economic', formulated under different successive historical epochs and with local variations.

In the very early stages of human history the economy was appropriative. This appropriation, as Engels comments, was not labour in the strict sense of the word, because labour begins with the making of tools. Still embryonic forms of production and division of labour

Principal Modes and Subtypes	Categories of Social Relations of Production	Modes of Appropriation of Surplus
Primitive Communalist Hunting Lineage	Solidarity Kinship	Communal
Ancient	State Citizen/slave	Taxation
Asiatic Classic African	Bureaucratic state Communal village	Tribute
Feudal	Landlord Peasant	Rent
Capitalist Petty agrarian Mercantile Industrial/monopoly	Bourgeois Proletarian	Profit
Socialist Advanced communist	Proletarian state	Social

Table 1: a typology of modes of production
(after T. Wessman, 1981)

appeared even in these early stages. Elements of organization of work are already present among gatherers. Among hunters and fishers the elements are quite explicit. Here we may have the initial transition from a naturally developed division of labour based upon age and sex different from one based on occupations.

Unlike the industrial revolution, and the revolution in science and technology at present, the transition from an appropriative to a producing economy required an historical epoch of a quite considerable duration. This circumstance also was manifested in the evolution of social relationships. The long coexistence of transitional forms in the economy became the source of heterogeneity and polymorphism on the actual social organisms characteristic of that stage.

Marx's argument is that the division of labour in primitive society arose on a two-fold basis. One, a physiological foundation in relation to production wherein the natural division of labour expands its material by the extension of the size of the community, increase of population and by inter-tribal arrangements. Two, the social division of labour is likewise based on exchange between communities, in the primitive condition of mankind. Marx asserted that the division of labour within the family is further developed in that of the tribe; he took no position that the family is further developed into the tribe. Marx's statement regarding the relation between the division of labour in the family and in the tribe is indirectly related to that of the relation of family and tribe. The issue next concerned the principle of the gens in its relation to the tribe on the one side and the family on the other.⁹⁹

Marx continued his systematic separation of the family from other

institutions of primitive society, wherein he followed Morgan's initiative, applying the differentiation to the separation of patriarch from gens/tribe, likewise to the relevant forms of property and its transmission. Private property in land is not to be directly derived in his theory from the collective property but came gradually to replace it in transition to political society, just as control over the gens and the family; the position of Marx is that Maine's conception, of the private family as being the basis out of which the sept and clan are developed, is completely wrong. Civilized society is artificial, being pervaded with "fictions", practices not found in primitive communities. The joint family has a secondary character and is separated from the primitive commune.

The relation of the family to society at the onset of the prehistoric process is interesting from this point of view, only insofar as it is related abstractly to the question of the relation of the family and society in the period of gentile society and its transition on "civilization", otherwise the question of the "horde" is entirely a conjectural matter; the comments introduced by Marx into the excerpts from Phear, Maine, Morgan and Lubbock reveal the direction that he took in the course of working them out. In the development of society from "savagery" to "civilization", the family in its various forms was separated from society and became one of the sets of relations maintained by its members.

The collective institutions of the family, community, village, gens and association of primitive societies are rather unitary, that is, they are not deeply riven; the effect on the individual is that they are subjectively comforting, objectively they are not despotic.

for this would imply the existence of an institution of hegemony that would contradict the relative simplicity of primitive social organization. Formally, most, if not all, the intermediating social institutions of community and association can be found in primitive societies; the difference from civilized society is that in the former case their interrelation is either zero or not highly developed, nor is their mutual opposition. On the contrary, in civilized society the relations of the collectivities to each other, and the individual within them, are divisive on the one side, privative on the other and the interests of the collectivities are opposed to each other within the same society.

The essence of the matter is that the destruction of primitive-communal society, which in itself was a progressive phenomenon, contained a "threatening danger" to the further development of society. Actually, no matter how low the level of productive forces of primitive-communal society may have been, it indubitably possessed one enormous advantage; the struggle against nature was conducted by a united front of that society. The entire primitive tribe participated in this motion and of course this unity contained a vast power. However, with the growth of the productive forces and the breakdown of the primitive communal system, this unity begins to disappear and subsequently the individual clans or extended families into which the primitive hordes began to decompose remained isolated, not uniting, inasmuch as, in the conditions in which they usually existed, no stimulus to reunion on a broader basis existed.

Certain basic considerations can be derived from the above. First the relation of the family to the society and its State (later), must

be separated from the relation of the family to society without the State. The form of the family is likewise variable. Second, the antagonisms of society and the State are only later broadly developed on the large scale, and the two kinds of antagonisms are therefore separated both in time and in quantity. Third, the family that contains a relation to services is an economic unit both of production and of consumption - which does not happen in industrial society where the single family is a unit of consumption but scarcely of production.¹⁰⁰

As had been said earlier, the primitive community was simultaneously the economic unit, the whole within which the group and everyday life proceeded, and the ideological collective. Under the conditions of the technology at the time, the community served not only as a supplemental force of production but as a prerequisite for production. It is precisely this that explains the circumstances that both within the commune as the unit of production and daily life and outside it, in the more complex social organisms of primitive society, the group (taken on diverse forms) presents itself as a naturally developed union of kinsmen. Marx and Engels realized the importance of kinship systems, not as a category which explains but on the contrary as a category that has to be explained. They recognized that kinship systems are part of a reality whose functioning constitutes the deeper logic of a social historical existence; despite their distinctiveness, complexity and non-uniformity for all societies, they do exhibit some "regularities" in a process of change. They are not subject, of course, to cumulative evolution, but under certain conditions they can accumulate common traits with contacting cultures for example or even with different economic conditions. As with language, the kinship

system belongs to the class of phenomena which can be differentiated in space and they can reflect some historical and structural regularities as their particular and concrete manifestation. "The tribal community" writes Marx in the "Formen", "or if you will, the herd, the common ties of blood, language, custom etc., is the first precondition of the appropriation of the objective conditions of life and of the activity which reproduces and gives material expression to, or objectifies it (activity as herdsmen, hunters, agriculturalist, etc.)." What requires explanation, according to Marx, is "not the unity of living and active human beings with the natural, inorganic conditions of their metabolism with nature, and therefore their appropriation of nature.. but the separation of these inorganic conditions of human existence from this active existence, a separation which is only fully completed in the relationship between wage-labour and capital."

Marx and Engels' first concern with anthropological material was to show the variety that exists in the nature of social relations and the historical peculiarity of a society where one group of people treats others only in respect of the labour they provide, labour which then can be bought and sold as though it was any other useful article. In the same way therefore as they had turned to primitive society for finding the opposite of capitalist relations of production, they turned to them for a form of family which was the opposite of the private, capitalist family, one that appeared in the community of a much larger, undivided group.

The transformation of the primitive gens from matrilineal to patrilineal resulted in the break-up of the gentile commune. This is of course a debatable issue not only among western (mainly French)

Marxists but also among Soviet scientists, where it has led to the development of differing schools of Marxist ethnography for the interpretation of certain specific questions concerning primitive society such as, first appearance of gentile society, caste systems etc.¹⁰¹ Even with the evidence they had at the time, Marx and Engels took account of the fact that whereas the decay of collective property and the appearance of private property necessarily give rise to a tendency for matrilineal filiation to be replaced by patrilineal, the effectuation of this tendency depended upon specific historical conditions; in certain cases replacement of matrilineal reckoning of kinship may occur rather early and in others, very late, sometimes not until early class society has been reached. Therefore, while the presence of patrilineal filiation and the patriarchal gens in a particular society may be evidence that it has already to some degree been affected by processes of "decay", the retention in a given society of matrilineal filiation and even matrilineal gens in itself, tells nothing of the stage of development.

It may be a gentile society in process of establishment, or a very early form of class society. Sometimes the two systems may coexist. As a consequence, the periodization of gentile society should be based not upon the replacement of one filiation by another, but upon those profound changes underlying this substitution, and upon changes in the relations of production, above all in property relations.

There is an important point here. We can always approach what anthropologists have called kinship relations in two ways: on the one hand we can take the total society and ask how it forms its kinship groups and how they function, and on the other, we can look at the

network of relationships that "organize" and bind individuals to each other in a network of kinship, that is, structures that are determined by social-economic relations independent of genetic-biological hypotheses. In any case, the direct observation of the latter factor, as a prerequisite of changes (or resistance to them) allows for a more subtle analysis and reconstruction than one which is achieved by pre-accepted kin typologies and terminologies.

The problem of the passage from gentile to caste system, according to Marx, entails the destruction of the principle of equality and the appearance of social stratification. Marx's comment was an hypothetical query: can the gentes give rise to the formation of caste, particularly if conquest is added to the gens principle? This concerns the manner in which the one is added to the other. Thus the abstract principle of the gens has as its opposite a concrete social organization, caste on the one side, and conquest on the other. In its transition the gens, by difference in social rank, can petrify into its opposite, caste. This is the most explicitly dialectical of all Marx's formulations in the Morgan notebook¹⁰², wherein the opposition between an abstraction, the principle of gens, and a series of concretions, conquest, caste and differentiation in social rank, is posited.

A third problem concerns the topic linked to the relations of production and the family; the nature of the property. Marx's commentaries - in regard to Maine and upon the thesis of Morgan that government in primitive societies is personal and founded upon relations that are personal - were very clear: he responded, that the relations of property and government in primitive society are

neither personal nor impersonal but collective.

Nevertheless, Morgan's work contained the notion that primitive society was totally without private property, yet organized. For Marx and Engels the existence of such a stage, or something like it, was essential in order to show fully the purely artificial and relative nature of both relations of production and private property. Their work on precapitalist systems is largely taken up with showing the indissoluble link between the type of property and the type of relations of production. The demonstration of the evolution and the transformation of types of property is as central as the demonstration of the evolution of relations of production. The very notion of private property far from an "inalienable right" as it was stated to be, was, in fact, itself a product of certain unique economic, technical and social conditions, and it was therefore reasonable to expect that it would be superseded, when the associated relations of production changed. Equally important was the demonstration of a correlation between private property and exploitation.

Exploitation, for Marx, is the process by which a group of people are deprived of the full value of their labour so that what they have lost becomes a surplus for another group who obtain this element. In order to answer those who had argued that without private property society was impossible, Marx looked for examples of societies without private property, therefore also without exploitation and for this he turned again to Morgan. In fact, Marx and Engels did not have much choice among the anthropologists of the time because most of them were heirs to the philosophical tradition which went back to Locke and which glorified private property.

Exploitation is not at all the same as the division of labour. Not all groups are social classes and there is considerable disagreement as to whether exploitation exists in pre-class societies. In the absence of social classes, age and sex are the primary distinctions involved in the distribution of social products. Some interpret discrimination by age as exploitation, others by sex. In considering the labour process from the angle of the relations of production, that is methods of appropriation of objects of production and final products, one is confronted by a simplicity which conceals complexity. One gains the right to appropriate the objects of production by being a member of one sex or the other. The relations of production define rights to the appropriation of objects of production for one's self and to the appropriation of the product of the opposite sex, the product of their surplus labour. It seems plausible to assume that each sex produces surplus labour for the other and in that sense equal rights and exchange exist. Where there is a division of labour between the sexes, men and women respond in "similar" relationships to the means of production, and therefore cannot be regarded as classes. The question is: are these groups of people standing in different relationships to the means of production? (including objects). Concerning the elder-junior relationship of course it does exist as a temporarily distinct relationship to the means of production. However all individuals move from one position to another in time, and it is unrealistic to view the relationship between the generations as exploitative (we refer always to the "primitive" mode of production).

It seems clear though, that the ethnographic record will not

allow exploitation as a cross-cultural universal. All of the societies reviewed are egalitarian in one or in another way.¹⁰³ The central fact about the non-exploitative social formations is that their members have free access to the basic resources needed to sustain life - all hunt, gather, and in general utilize the environment without let or hindrance.

There are no persons whose access to resources is privileged and no corresponding group whose access is impaired. It is crucial to distinguish between societies of this egalitarian, primitive, classless kind and others which make distinctions between types of access to resources. It is privileged access to resources and the right to their use that allows exploitation to take place. Exploitation can be defined, it is real and its effects go far beyond the strictly economic or more or less vague opinions of ill-use on the part of the exploited. Exploitative societies have a characteristic set of institutions and while they have occupied less than one percent of human history, the experience of it dominates people's consciousness so completely that it seems to many an integral part of "human nature".

The diagnostic feature of any class society is the existence of a predatory ruling class that is based upon a definite mode of exploitation. The economic is connected to the political (and religious); the powerful use their power to protect their privileges, the most important of which is their "right" to exploit those from whom they extract a surplus. In pre-capitalist class societies exploitation takes various forms, such as taxation in the ancient mode, tribute in the asiatic mode and rent in the feudal mode. The capitalist mode however takes the form of profit or unpaid labour

which can be accumulated and multiplied. Neither of these forms seems to exist in hunting-gathering societies. Where tasks demand more specialization and "organization", it would seem that the increasing development of this contradiction leads to ownership or control of some particular important object of production - land for agriculture or grazing taking precedence, so that labour applied to other objects and to the final product has no bearing upon the appropriation of the product.

Perhaps the most important of all ramifications of exploitation is its relation to social inequality, inextricably interwoven with surplus.

Giving a detailed account of these processes is far beyond the scope of this work but there is a point that makes a further elaboration useful, as it is connected with many recent trends in the study of primitive (and palaeolithic) populations.

It concerns surplus product. Most notions of surplus begin with some estimates of a human being's minimal caloric needs and define surplus as the difference between these needs and the total product. There is some precedent for this procedure in the work of Marx, who wrote that the cost of the production of labour power in capitalist society is the cost required for maintaining the worker as a worker and of developing him into a worker (Wage, Labour and Capital). However, Marx warned that this definition holds for the "species", not for individual workers. It is necessary to begin with a conception of the mode of production as a whole, and to seek an understanding of surplus from this basis. It has been shown, for example, (E. Wolf 1966) that for peasants their way of life involves various "funds" (replace-

ment fund etc.) which are indispensable for their production and reproduction; and there are numerous examples of historical circumstances in which minimal subsistence needs were not met. But to begin with an individual's subsistence needs rather than with the dynamic of reproduction of the mode of production is to take an historical product - e.g. the property-less worker - as a natural condition.¹⁰⁴ In this line of reasoning a unit of analysis is very important for the comprehension of a "primitive" mode of existence, mainly what is called a hunter-gatherer's one. Surplus (accordingly, exploitation and inequality) is characteristic of a specific mode of production, not simply of the individual's "caloric need".

The categories of Marxist theory which are appropriate for calculating surplus (-value)(S) are variable (V) and constant (C) capital. Variable capital is that part of the total capital advanced as wages, while constant capital is the capital advanced for the instruments and materials of production. Although these categories were devised for estimating surplus-value under capitalism, they are useful in discussing other modes as well, because they relate together the reproduction of the producers and the constant renewal of the means of production. Both V and C "capital" are necessary for reproduction, not just the former. Thus the total product contains C+V and the surplus is relative to the sum of them.

To properly understand the different relations in society, it is first necessary to comprehend the historically concrete social and economic formations from which kinship, family, community, ethnicity and so on, derive their identities. It is also necessary to incorporate an appreciation of the modern-world system. (Fig. 8)



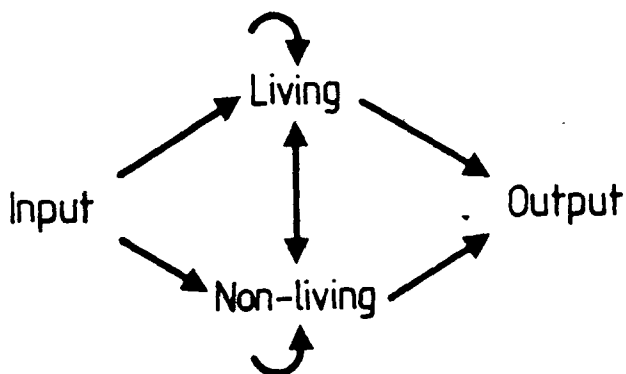
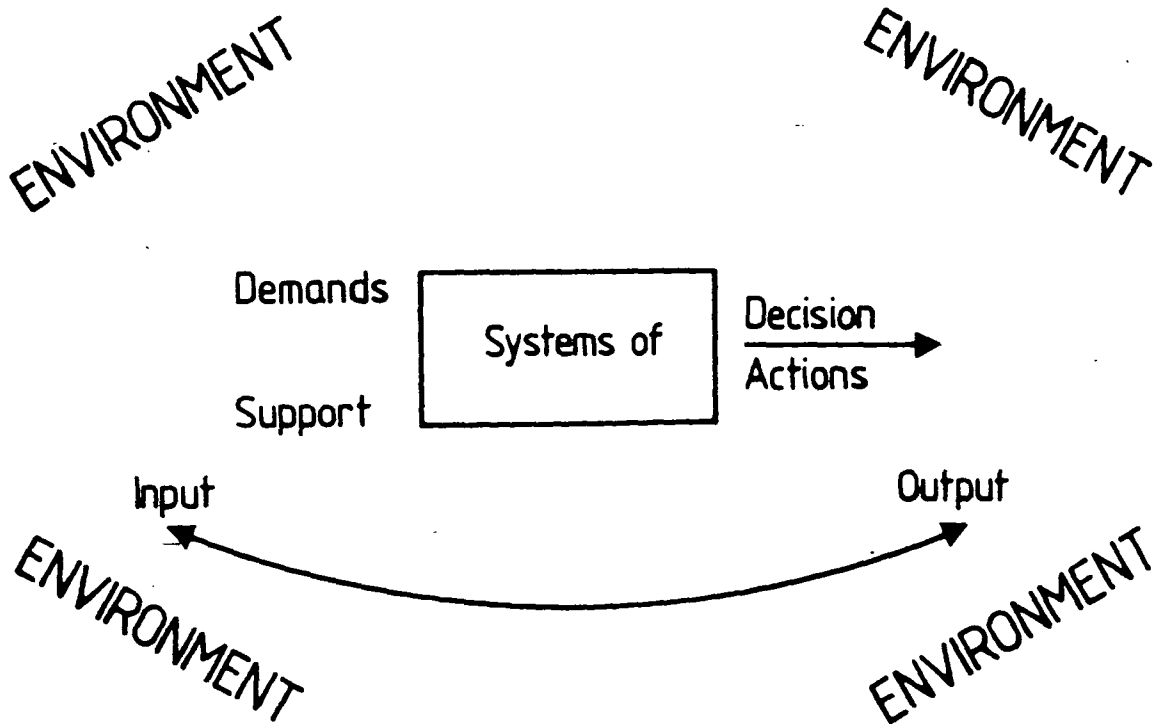


FIG 1.8 : a simple representation of the modern world system is shown diagrammatically above.
(adapted from different sources)

Obviously there are "inequalities" in primitive society. The question remains if certain groups transform inequalities into long-term advantages over other groups. The basic principle underlying the question is that of human beings taken as property. In that sense, the elders may control the means of production, but eventually juniors become elders, while slaves do not become masters, peasants do not become landlords and proletarians do not become capitalists during their lifetime.

1.11 Summary

Our understanding of complex reality depends on the questions we ask: these in turn depend upon the culture into which we have been socialized and the view point or discipline in which we have been trained. A fact is only a fact in terms of theory, and problems are defined as such within an implicit or explicit theoretical framework. It seems clear that any attempt to explain the ordering and pattern of human activity is constricted if forced into a monocausal framework. When anthropologists and archaeologists move away from the mapping of a "static" situation to consider aspects of change, they inevitably become involved with values, both by the problems they choose to consider and the interpretation of the "facts" they present. This kind of study has suffered individually from a parochial concern to defend the importance of the specific "factors" with which they are more concerned. The effect of this tendency to "empirical closure" of a system has been to make its application to any field a rigidly simple question of whether it "applies" or not. Applications are interpreted

in "all or none" terms; it either is the case or it is not. Societies do not change or survive simply through the impact of one or two factors. When attempting to characterize the evolution and behaviour of "primitive" societies it is important to emphasize the interrelatedness of all aspects of their organization. Besides environment and technology, socio-economic organization is a basic component which provides the investigation of human relationships in that epoch, with the possibility of understanding and explaining adaptation and change through time.¹⁰⁵

This is doubly important: an undue concern with biological and/or environmental constraints as such, not only fails to tell us anything about critical differences and similarities, it also gives the impression that "economy" is an abstract variable never determined by social formation.

Whereas concrete socio-economic formations exist in historical reality only when incarnated in social organisms, within theory the inner essence of "single" societies appears in a pure form as something existing "independently", as the ideal social organism of a given type. In that sense, an understanding of Marxist anthropology corresponds to a very large degree to the conception of "human essence". The unity of all that is human cannot be found either in the identity of a single and singular biological organism, or in the identity of "spirit": this unity is not something given before history, but made in history.

The problem of explaining human origins, the evolutionary emergence of language, tool-making, kinship systems and culture generally has seemed almost insoluble since Darwin began to posit

the issue in scientific terms. Of all the problems, one of the most intractable has proved to be that of interpreting how the "dominant" mode of most sociable higher primate species - a characteristically "egotistical" figure not given to surrendering or sharing either food or mates unless forcibly so compelled - could have been transformed into the very different human type of hunter-gatherer societies. It would be hard to understand how the "transition" to large-scale hunting could have "survival value" for the species at all.

With a Marxist formulation this transition from "nature" to "culture" represents a break in the continuity of the evolutionary process - a dialectical leap. This break is a break with "anarchy" in the sense that a baboon-harem system and, to a greater or lesser extent, any system of primate "dominance", is an example of ordered anarchy. It is a system in which sexual and economic issues are settled by individual dominance or force. At some pre-cultural stage the ancestors of *Homo sapiens* - perhaps only very briefly - were organized in a similar manner.

The transition to culture occurred perhaps as the result of an "explosion" which blew apart a system of dominance which had become so extreme and so unstable as to lose its capacity to hold its parts together at all.

The underlying determinants of this "revolution" were ecological or more properly economic-rooted ultimately in the requirements of the transition from vegetable food-gathering (or the occasional hunting of small game) to regular big-game hunting.¹⁰⁶

In the light of these considerations, the analysis of the work process is not simply a precondition of an adequate understanding of

Marx's theory of history and society in general. Marx regarded work, material production, as the defining factor both in anthropogenesis and in subsequent human, historical development. This does not mean however that the genesis of human species is possible "only" with productive activity and without the simultaneous emergence of the first forms of social life and cooperation. Work, sociality and consciousness are integral and indispensable constituents of the historical forms of social life; they are equal moments of "human existence", even if they are not equal as far as it concerns their "significance" for the theoretical explanation and the practical induction of historical change.

This latter point brings out the question of how "what" and "how" are examined. That is, to what extent a coherent theory like dialectical materialism - a theory moreover "formulated" to underline and explain the structure and mechanism of capitalism and class society - can be used to reveal different aspects and relationships about primeval forms of society. After all, one is still obliged to work with limited data, not always reliable information, and investigations which have not been carried far enough in a direction to yield the necessary information - despite the accumulation of "evidence". With this state of affairs, a dialectical approach would imply a back and forth process, whereby particular societies are analysed in terms of their available characteristics, in which hypotheses generated theoretically are used to "restructure" the data, and where the theoretical position itself is further elaborated in such a way that its explanatory power is used to express the hidden structures and connection of the society under investigation. For such an explanation

two of the major categories (often misinterpreted) of Marxism must be considered: the formulation of evolutionary stages and that of economic development.

Marx and Engels accepted Morgan's sequence of stages, but at the same time they took up the critique of this theory. (Morgan himself in fact knew the limits of his scheme, which he offered as "convenient and useful" but "provisional"). Whereas the social evolutionists of the latter half of the nineteenth century, considered the stage as though it possessed a reality in itself, and its defining features as a sort of "iron law" of evolution at work both in nature and in society, Marx treated the transition between stages as the moment of importance.

In this way, he was able to move away from the "static" features of a society to the dynamic interconnection among humans, their relation to social production and to a concern with the transitional development of the evolution of society as a dialectic of evolution/revolution - that transition being the "influential" interaction between man and environment, technological innovations, forms and division of labour and accordingly economy. Consequently men, "enter into particular, necessary relations of production, which are independent of their will", these relations emerging in historical stages which are verifiable. Relations of production) correspond to ✕ a particular level of productive forces on whose development they depend. That dependence might seem to demonstrate that social reality is determined unilaterally by natural forces (This is what Plekhanov ✕ believed, when he traced all social relations back through the mediation of productive forces to natural, geographical conditions, as the

"last instance"). In reality, this is not the case. Natural forces become productive forces, because they are harnessed to human labour. They become social forces by being incorporated into human relations and applied to human needs; and only become "productive", when they serve the production and reproduction of human life.

In traditional tribal societies technology has derived directly from human practice. Labour begins with tools and the two cannot be disassociated. Tools do not have an existence of their own; they form part of an integral interactive process which does not end with the "making" of the tool but extends beyond it. To discern this, it is necessary to reestablish the connections, which have been severed, between different modes of "significance", in order to see the extent to which the articulation of "meaning" within each, is itself a socially determined phenomenon. One can no longer say that the function of a tool is its performance of a single isolated task. A range of tools perform a range of functions and the functions are a product of the socio-economic environment. Thus an interpretation of the role of technology in society can be attempted in order to characterize the basic properties of production activity and the several subsystems which determine and/or define the nature of its development. As Bates writes "under the present conditions of archaeological development, the possibility of carrying out the quantification of the productive forces may seem like a subject of ... fiction. In reality it is a task of the future development of that science.."107

Material changes occurring within the economic conditions of production can be "abstracted" and "formalized" as a law converting

quantity into quality, and vice versa. It is true that in the historical period preceding the emergence of private property, the products of labour do not become - according to Marx - forces independent of men, and ruling over them, but form their real, communal property - and this is supported by today's ethnographical evidence. Work appears here "directly" in its anthropological significance as an activity that develops the power and capabilities of humans. Equally important is the fact that there is no convergence of individual and social development since "individuality" does not exist at this level of development. The individual is a clan person, a link in the community; his social relations are the self-evident frame of his own existence. The emergence of individuality itself, takes place through the formation of the "abstract" individual, i.e., through alienation. It is clear from the outset, that the abolition of the naturally given division of labour, means the transformation of the character of the labour process, and of the social mechanism that distributes individuals among different branches of production (in the broad sense), and it is not directly related to the question of to what extent individuals can, during their lifetime, vary and alternate the forms and types of their productive activity. Originally subject to collective/tribal relationships, themselves responsive to the natural needs of social inter-connections, work gradually became an economic commodity, labour power something that has to be exchanged; this led to the dissociation of working population from their social context, in other words their alienation. Without the concept of relations as internal to the processes that we call matter, change is by implication external to any given phenomenon. Yet, until one

has directly faced the problem of dealing with human existence in material terms, one has not dealt with man, his history, his culture or his science. The objective conditions, technological, economic, environmental, that preceded - hence "caused" - later developments, cannot necessarily and inevitably be located. The more remote the period studied, the more the internal stresses, alternative choices and revolutionary as against conservative ideologies that defined precisely how, when and where major changes were initiated, are "lost" in the ambiguities and "spottiness" of archaeological and historical data. However, despite the complexities, the question remains untouched: rather than seeking comparabilities in statistical terms and counting, according to some unstated "value" scheme considered as proven, the Marxist commitment is that of detailed study of societies, based on the dialectical-materialistic analysis of relationships and contradictions that must be elaborated, refined and tested, both through "theory and praxis".

Notes and References

- 1 Capital Vol. I
- 2 As, for example, Huxley, Lubbock, Maine, Morgan, Phear, Kovalevsky.
The Comptean positivists in the generation before Darwin made a cult of the progress of mankind, a doctrine which was not specifically rejected by the Darwinians, despite Darwin's generally anti-teleological direction.
- 3 Nizan P.: Les materialistes de l'antiquite.
- 4 Engels F.: Dialectics of Nature.
- 5 Capital Vol. I
- 6 Grundrisse -
- 7- Hegel "The Absolute Idea alone is Being, imperishable Life, self-knowing truth, and the whole of truth. The Absolute Idea is the only object and content of philosophy. As it contains every determinateness, and its essence is to return to itself through its self-determination or particularization, it has various phases. It is the business of philosophy to recognize in its them... The derivation and cognizance of these particular modes is the further business of the particular philosophical sciences." Hegel alludes to this passage in his Preface to the Philosophy of Right, where man's social and political institutions are understood as particular modes of the Idea and as various phases of its self-determination. Marx (and Feuerbach in that respect) did not doubt that Hegel's philosophy was essentially

theological in character, and that what Hegel called the Absolute was what the ordinary man calls God; but he is not charging Hegel with empirical inaccuracy; it is the philosophical form, not the empirical content which he attacks in his Critique of Hegel's "Philosophy of Right". Marx is careful to maintain the distinction between the two, form and content, because of his conviction - often repeated in the course of the Critique - that within his speculative framework Hegel accurately depicts the existing institutions of political society.

8 On that issue G. Lukacs for example understood Marx's position in regard to society solely on the objective side, in opposition to Hegel. For this it is necessary to go not only to the product of the given historical process, but to the onset of the process of its formation, which is to grasp it as a "temporal" phenomenon (diachronically).

9 Blauberg et al, 1977.

Averkieva - Petrova Yu. 1980.

Western writings often contain statements about the inapplicability of Marxist method, interpreting historical materialism in a way that leads ultimately to economic determinism, fatalism and pre-conceived "stable" periods and stages. But the word "historicism" has been used in a variety of ways. M. Mandelbaum (1967) has defined it as follows: "Historicism consists in the attempt to take seriously the fact of change..... Every particular fact is treated with relation to the process of change out of which it arises, and this process is seen as immanent in it." That Marx was a historicist in this sense is indisputable.

Popper's statements about Marxism are well-known (see especially the critique in "The Poverty of Historicism", "Conjectures and Refutations" and "the Open Society and its Enemies"), as well as his critique of historicism particularly as exemplified by Marx, Hegel and Plato. It is not the place here to deal with that, but just an example we think will suffice; in comparing Plato and Marx, writers have frequently pointed to communism as a common doctrine. ... Even if we accept that opinion, for Plato "communism" is primarily a device to instil group solidarity in the ruling classes, and is restricted to the guardians and auxiliaries. For Marx, it is the means of freedom and equality in a classless society, enveloping the whole social order.

10 Anti-Dühring.

11 "The theoretical attempt to ensure that no man in the world should suffer material or intellectual need any longer is something which does not need any metaphysical "ultimate" justification. Critical materialism disdains to continue the tradition of mere philosophizing by investigating "the riddles of the world". Its intellectual construction grew out of the definite historical tasks of society. Its aim is to help men out of their self-made prison of uncomprehended economic determination. Economic factors are as sharply emphasized by the theory as by social reality itself. However, neither the economy nor the proletariat was for Marx a metaphysical principle of explanation. The economy was to be brought again from its all-powerful position to a "subordinate" role. The materialist character of Marxist theory does not amount to a confession of the incurable primacy of the

economy, that antihuman abstraction achieved by the real situation. It is rather an attempt to direct a man's attention towards the internal logic of their own conditions, towards the pseudophysics that make their commodities and at the same time provides the ideology according to which they are already in control of their destinies" (quoted from Krader: Ethnological Notebooks of K. Marx).

12 Capital Vol. I

13 Marx developed a series of positions in philosophical anthropology. In regard to the alienation of man in society and in nature in Economic and Philosophical Manuscripts; the doctrine of man producing himself by his labour and by his relation in society in The German Ideology and The Holy Family; the opposition of the concretion to the abstraction of man in the Theses on Feuerbach. Later he took up the development of economy and society among primitive peoples in the Grundrisse, returning to the theme briefly in the Critique of Political Economy. His exposition of primitive, as opposed to capitalist production, is set forth in the chapter of the social division of labour in the Capital. In the Grundrisse and in Capital, primitive man is taken up as a category, the abstraction of the primitive conditions as a means and in opposition to capitalist economy without reference to particular primitive peoples. The further concretion of the particular primitive peoples in terms of the identified social institutions is then developed by Marx in the Notebooks of the period 1879-1882, according to the ethnological material available at the time and mainly studying

the works of Morgan, Phear, Maine and Lubbock amongst others.

14 Lenin: What the "Friends of the People" are and how they fight against the Social Democrats.

15 Capital Vol. 1

16 Engels: Dialectics of Nature.

17 Darwin called attention to the natural history of technology. Marx to the cultural history of human technology. Technology reveals the active component and relation of human beings to nature. This should be understood as the relation of particular societies, it is not general to all mankind, and must be separately mastered. The mastery of their arid habitat in the Kalahari desert by Bushmen for example, the adaptation of means of detection, conduit and storage of water by these people, far exceed the ability of the later European intruders. who upset the balance between the social group and the natural surroundings. The human beings do not learn and adapt to nature as a "species" but only through the traditions of particular groups. Moreover, the problem of production by appropriate technology contains within itself the problem of reproduction, which later is to be understood in the natural sense of biological reproduction in the cases of the human and of plant and animal species; but in the case of humanity, in all circumstances, both of literate and non-literate cultures, the reproduction process is the matter

of the continued existence and furtherance of mankind not as a form of animal life. It is instead the matter of the continued existence and furtherance of particular economic relations, not merely as an abstraction - the technological basis of life and adaptational history "gives way" to the economic bases of human life and the history of these. The adaptation and techniques of production and reproduction of life are the same abstract categories in the case of human history as in the case of natural history; concretely they differ; the rate of development in the case of mankind is rapid and multivarious, while the biological rate of development is as a rule geologically slow. The abstract problems of production and reproduction of the species are the same, but concretely they are realized in different ways; the differences^S between animals and humanity, in this regard, are great, the differences within the human species relatively small. The dialectical opposition of potential unity and actual difference is the same as that of alienation and reunification of humanity and nature, and it is joined to the dialectic of the unity of humanity.

Frolov I.T. 1978, Rose S. - Kamin L. et al, 1984, Ribes B. 1978.

18 Marx to Kugelmann, 27 June 1870.

19 Engels to P. Lavrov 1897.

One need not⁷ belabour the evident points made by Engels which stand until today and have acquired an even deeper and more prophetic significance. It is not by any sort of "chance and necessity" that we have to confront sociobiology "which challenges the integrity of culture as a distinctive and symbolic human

creation and in place of social constitutions of meanings offers a biological determination of human interactions with a source primarily in the general evolutionary propensity of individual genotypes to maximize their reproductive success..."; and, as M. Sahlins continues "it is a new variety of sociological utilitarianism, but transported now to a biological calculus of the utilities realized in social relations. The New Synthesis is to include the humanities and social sciences... From the idea of differential reproduction dependent on chance, genetic and environmental shifts, selection successively became synonymous with optimization or maximization of individual genotypes and ultimately with the exploitation of one organism by another in the interest of an egotistical genetic fitness ..." Ever since Hobbes placed the bourgeois society he knew, in the state of nature, the ideology of capitalism has been marked by a reciprocal dialectic between the folk conceptions of culture and nature. Conceived in the image of the market system the nature thus culturally figured has in turn been used to explain the human social order and vice versa, in an endless interchange between social Darwinism and natural capitalism. Sociobiology is only the latest phase in the cycle: the grounding of human social behaviour in an "advanced" or scientific notion of organic evolution which is in its own terms the representation of a cultural form of economic "action" and accordingly colonialism, exploitation, war, as inherent in the human nature, genetically controlled and thus "inevitable" and "justified".

Sahlins M. 1976, Dawkins R. 1976. Wilson E.O. 1985. Rose S. et al 1984, Monod J. 1976.

20 The classical ideal of science from the 19th century has been on "value-neutrality". In positivist thought this doctrine is legitimated by a theory of knowledge. The relativists absolutize norms of the establishment. But this is done in such a way that it seems as if norms are absent, and that the science is value-free. The norms are tacitly projected into social studies and assumed as the height of "rationality". "Objectivity" is made to coincide with "rationality". That which does not coincide is not "objective", not "scientific". Basically the operation rests upon a form of subjectivism; its most typical form is found in modern-day empiricism, where the problem of objectivity is defined in terms of relationship between theory and empirical data, instead of a relationship between theory and objective reality. It may be said, that the theory is related to its empirical referent (sense data, observation statements etc.,) but not to its real referent (i.e. to objective reality). This is a non-realistic view. In Marxist philosophy of science, it is called an idealist view. The empiricist finds it natural to define "objectivity" as some kind of "value-neutrality". Among observation statements and data, he distinguishes facts and evaluation. Research is supposed to involve only the reference to facts and not involve value or value-judgements. These latter are rejected as metaphysics. Further work in this direction was done by the functionalists, whose formulations and defence of the "value-neutrality" doctrine have been thus influential, and in practice served to exclude Marxist social science from the realm of what is considered the legitimate "framework of scientific

discussion". Value-neutrality belongs to a paradigm which as a rule relegates the scientific socialism of Marx to the "unscientific".

21 Elzinga A., 1975

Kelle-Kovalson, 1973.

22 Lenin Collected Works Vol. I

23 "Industry is the actual historical relation of nature and hence of natural science to the human being; if industry is therefore taken as the exoteric revelation of the human essential powers then the human essence of nature or the natural essence of the human being will also be understood; hence natural science will lose its abstract material or rather idealist direction and will become the basis of human science just as it has already become, although in alienated shape, the basis of actually human life; and one basis for life, another for science, is a lie from the outset. Nature which becomes human history - the act of genesis of human society - is the actual nature of man; therefore nature, as it comes to be through industry, even though in an alienated shape, is true anthropological nature ..." (Capital, Vol. I)

24 Engels: Holy Family. Marx: Grundrisse

25 Marx: Capital Vol. I

26 ibid.

27 Krader L. 1972, 1977.

28 Malthus T.R. 1970.

29 The storage of the computer is in this sense accumulation; it is not a change in direction of the process from the primitive

labour to the capitalist labour in factories; it is however,
an increasing dissociation and alienation of the workers.

- 30 As for example in certain passages in Bloch, whose critique of
the commodity, though inspired in large measure by the early Lukacs,
runs the risk of abandoning the materialist position.
- 31 Wage-Labour and Capital.
- 32 Capital Vol. I
- 33 ibid.
- 34 ibid.
- 35 ibid.
- 36 ibid.
- 37 Grundrisse .
- 38 Dialectics of Nature .
- 39 Capital Vol. I .
- 40 Economic and Philosophical Manuscripts of 1844.
- 41 A Contribution to the Critique of Political Economy.
- 42 Grundrisse; Paris Manuscripts.
- 43 Sixth Thesis on Feuerbach.
- 44 Krader L. 1977 .
- 45 Critique of Political Economy, also Capital.
- 46 Krader L. 1972. 1977.
- 47 ibid and 1976 .
- 48 Marx to Lassalle, 16 January 1861.
- 49 In the history of materialism, there are broadly two main
tendencies. The one leads from the atomism
of Democritus, via the physics of the Renaissance, to the one-
sided natural-scientific materialism of the 18th and 19th centuries.

The other tendency, which some call the "Aristotelian left" developed from the naturalistically inclined form/matter adopted by Averroie - the great medieval Aristotelian - via G. Bruno and Bacon, whose teaching according to Marx contained within itself "the germs of all-round development" (Holy Family) and finally to the crypto-materialistic elements of the romantic philosophy of nature.

50 Wages, Price and Profit.

51 The point to make here is that in capitalism ~~that~~ movement results in the transformation of the thing into human by attribution of human qualities to the former; it is also the opposite, the attribution of the quality of a thing to a human being, of capital to the capitalist and thereby in turn the attribution of the quality of the reified human being, of the reified human consciousness, to the thing, capital.

52 Capital Vol. 1

53 A "classic" summary of the relationship between the base and the superstructure is Plekhanov's distinction of five sequential elements 1 - The state of productive forces, 2 - The economic conditions, 3 - The sociopolitical order 4 - The psychology of social man 5 - Various ideologies reflecting the characteristics of this psychology. This is a more complete formulation than the bare projection of a base and a superstructure - as the notion

has been distinctively treated by many western scholars. But what is wrong with it is its description of these elements as sequential, when they are in practice indissoluble: not in the sense that they cannot be distinguished for purposes of analysis, but in the decisive sense that these are not separate areas or elements, but the whole specific activities and products of real men. (Williams R. 1977) What is that reality in the materialist conception? Above all it is not the so-called "facts" at the surface of a society; it is not a complex of achieved things, but a complex of processes, in which things that are apparently stable, no less than concepts, undergo an uninterrupted change of coming into being and passing away.

54 Capital Vol. 1 .

In a true society, it would be the needs of the individual and not his physically or intellectually conditioned capacity for labour, which, in the last analysis, provided the measure of his consumption. Marx continually deals with this theme first developed in the German Ideology. In other words, a different form of activity of labour does not justify inequality, confers no privileges in respect of possession and enjoyment. Social equality means not that all are treated alike, but that the richness and the diversity of the wishes of individuals come into their own.

55 German Ideology .

56 Capital Vol. 1 .

57 Grundrisse (this section of the Grundrisse appeared in English translation (1964) under the title, "Pre-Capitalist Economic Formations".

- 58 *ibid.*
- 59 *ibid.*
- 60 *ibid.*
- 61 Markus G., 1978, Wessman J. 1981, Hobsbaum E. 1983
- 62 *Capital* Vol. I
- 63 *ibid.*
- 64 Krader L. 1972, Schmidt A. 1971, Danilova L.V. 1971, Roubaud P. 1980.
- 65 *Capital* Vol. II.
- 66 *Philosophical Notebooks.*
- 67 Eichhorn-Bauer et al, 1974. Kelle and Kovalson 1973, Semenov Y. 1981, Vasil'ev-Stuchevskii 1976.
- 68 Lenin: Once again on the Trade Unions, the current situation and the mistakes of Trotsky and Bucharin.
- 69 *The German Ideology.*
- 70 *ibid.*
- 71 *Grundrisse.*
- 72 *Capital* Vol. III.
- 73 *Grundrisse.*
- 74 *Capital* Vol. III.
- 75 *Grundrisse.*
- 76 *ibid.*

In fact, specifically human productive activity is only possible when a contraposition and comparison can be made between the aim, the desired ideal form of the object to be brought about, and the actually present and perceived thing itself; that is, when activity is guided and controlled by an intention, by the objective

to be attained. "At the end of the labour process, we get a result that already existed in the imagination of the labourer, that existed already ideally at its commencement. The labourer not only effects a change of form in the natural material on which he works, but also he realizes in it an aim of his own that gives the law to his modus operandi and to which he must subordinate his will" (Capital Vol. I).

77 Pre-Capitalist Economic Formations.

78 Not of course with the methods of those of the anthropologists who see in every kinship relation, mode of production or personal disagreement in primitive societies, a form of exploitation, surplus-labour, hostility and similar "natural" characteristics.

79 Pre-capitalist Economic Formations.

80. Markus G. 1978, De Ste. Croix G.E.M. (introduction) 1981, Cohen G.A. 1982, McLennan G 1981, Averkieva-Petrova Y. 1960.

81 This interpretation of the "anthropology" of Marx' apparently corresponds to a very large degree, with the conception of "human nature" and man in general, elaborated by A. Gramsci. The answer to the question "what is man?" cannot be found, according to Gramsci, in the single individual man; the unity of all that is human, implied already by the question itself, cannot be found within the identity of the biological (material) nature of men, nor in the identity of "thinking" or "spirit". This unity is not something given before history but made in history which is the actual and active process of unification, a process unaccomplished and ongoing. Departing from this, Gramsci reveals the practico-utopical character of all philosophy and the

revolutionary character of the Marxist theory of man as the philosophy of praxis.

82 Popper K., 1972 a,b.

83 From German Ideology. (see also J. Wessman, G. Markus, R. Williams).

84 German Ideology

85 Grundrisse.

This is one of the very few actual statements of Marx on which the Althusserian structuralist interpretation of Marxism is based. And one may even agree (as M. Markus states) with Althusser that "relations of production" cannot be treated as "simple human relations" (Althusser: Reading Capital), if one understands by the latter the personal contacts between individuals. In this sense Marx writes: "These relations are not from the individual to the individual, but from the worker to the capitalist, from the tenant to the landowner etc." (The Poverty of Philosophy) Furthermore, social relations become objectified and institutionalized and in this form they constitute, as Marx tells us, "a living unity" or, if one prefers, a "structure". In this sense the relations have an objective and irreducible existence; and the less control the individuals have over these objectified and objective conditions of their existence, the more these conditions become an autonomous power over them and appear as the real subject of social life in history. Only for Marx, this is a historical fact characterizing a given type of social development (i.e. alienation), a fact that has to be negated in praxis and overcome, while for Althusser this is the hidden truth

of all history, which can only be established and revealed by science, theoretical practice. The possibility of abolishing the alienated character of these conditions and relations - at least its abstract possibility - lies for Marx in the fact that this alienation (the cutting free of social relations from the related individuals) can never be total, it never can eliminate the subjectivity of social individuals and reduce them to mere "positions" and "functions" in a given system of relations of production (compare with Althusser, *ibid*) - in the fact that "forces of production and social relations" in the end always remain only "two different sides of the development of the social individual" (*Grundrisse*),

86 The German Ideology.

87 Semenov Yu. 1966, Pershits A.I. 1977, Kopnin P.V. 1974.

88 Historical materialism provides the basis for a theory of social change and social development that is not limited, as in functionalist approaches to social change, a change that is determined by and takes place within the existing "social structure" or by the "impact" of outside forces, but which explains the evolution of different types of society as well as changes within a particular type of society by the emergence and development of contradictions within them - a sort of endogenous dynamics. To go further on the other hand than a "structural morphology", it is necessary to account for the forms, functions, mode of articulation and conditions of transformation of the social structures within the concrete societies studied by the historian, the anthropologist, archaeologist etc. It is precisely in order to accomplish this

complex task, which presupposes a combination of several theoretical methods, that Marx's notion of the determination in the last instance of the forms and the evolution of societies by the conditions of production and reproduction of their material life is needed as the central hypothesis.

Berthoud A. 1974, Godelier M. 1977, Seddon D. 1978, Slaughter C. 1984.

- 89 One question in this context is "what are the critical elements and limits of the system of reproduction of a group", and another "what are the spatial/social boundaries of the group". Although the two questions are interdependent to an extent, in fact conditions of reproduction can be determined more adequately in terms of the first, according to which every relevant factor might not always be inside the group, but must always be inside the system. According to Engels "... the determining factor in history is in the last resort the production and reproduction of real life. More than that neither Marx nor I have ever asserted. If therefore somebody twists this into the statement that the economic element is the only determining one, he transforms it into a meaningless, abstract and absurd phrase The economic situation is the basis, but the various elements of the super-structure also ... exercise their influence upon the course of the historical struggles and in many cases preponderate in determining their form." There is an interaction of all these elements in which, amid all the endless host of accidents.....
 the economic movement finally asserts itself as necessary.
 (letter to J. Bloch).

- 90 It is not without reason thus, that in recent times many western scholars, while recognizing the validity of archaeological-ethnographic comparisons, confine their possibility merely to the regions where the continuity of cultural development can be traced archaeologically. This view however, in which the method of "controlled comparison" is used as a starting point, seems to be too extreme. Elaborated in Soviet ethnography, the theory of economic-cultural types opens up possibilities for comparing societies of similar types regardless of the area of their location and cultural continuity (Pershits 1980, Kabo V. 1982).
- 91 Leacock E. 1981 Pershits A. 1982, Kobishkamov Yi 1964.
Andrefov I 1985 (a,b)
- 92 This means that in using the historical comparative method, one should be guided by the general principles of drawing conclusions by analogy with due respect for the usual conditions of enhancing the probability of such conclusions. It is quite clear that a socio-economic formation in the pure sense i.e. as a distinct social organism, can exist in theory, but not in "reality": in history, it exists indistinct societies as their inner essence, their objective basis. The concept of socio-economic formation is not reducible simply to the idea of a social type. It is markedly more complex and many-sided, representing the common elements shared by social organisms, falling under the same socio-economic structure. What, in the end, unites all these social organisms, and above all determines their inclusion in one type, is the presence within them of one and the same system of productive relations.

93 In this case, the significance of the formation of the capitalist system is indisputable. At the time when that system was emerging in Europe, Australian Aborigines' for example, were still at the stage of primitive structure. Capitalism was brought to Australia along with the white settlers, and the aborigines were in part destroyed, in part pushed back into the least desirable locations. Thus, although the Australian aborigines are not the equivalent but an analogue of Mesolithic mankind there are no other people as representative as they are for the study of classic primitive history. Things are more complicated with Bushmen: the assertion that they - at least partially - lost their former high culture as a result of their being driven into the region they now inhabit is not without support. This does not mean, however, that this regressive culture cannot be used for historical reconstruction. Similar economic systems, however they have arisen, bring about "similar" socio-developmental forms. One very general principal assumption, for example, may be that classic primitive society was based mainly upon tradition, in the very broad sense of the word. Another, that primitive society had a specific organization of power, which included in particular mechanisms for settling conflicts. But, in contrast to power in antagonistic class-society, power in primitive society was not separated from the people.

This is asserted in one way or another (although heavily disputed concerning the "degree" of power) by all the "classical" ethnographers. Again, is a matter of "individual, politico-scientific" interpretation.

- 94 The inadequacy of the theoretical concepts within this area of studies is no longer due to the insufficient development of the factual case of ethnography or archaeological data, although certainly much more information is needed for the evaluation of pre-literate societies in general and the palaeolithic in particular; it is rather the consequence of a conservatism, a "backwardness" of theory in respect of the ever increasing factual material. This explains the perseverance in the history of primitive societies of the narrow procedure for the reconstruction of the past that either has no basis whatsoever or else arbitrarily adduces the facts in order to uphold a concept which has been developed a priori. For a similar point of view - though at different explanatory levels see, for example, Bates L.F. 1984, Bloch 1983, Friedman 1979, 1983, Kristiansen K. 1984, O'Laughlin B. 1975, Leacock E. 1982, Gellner 1975, Wessman J. 1981, Danilova L.V. 1971, Slaughter C. 1984.
- 95 "A rather simple but often overlooked confusion" as Leacock (1977) states "has plagued subsequent discussions of historical stages. There is a common failure to distinguish between the definition of stages as a necessary preliminary step to asking meaningful questions about a given period, institution or event, and stages seen as themselves the answers. "Stages" define major alternatives in the structure of productive relations; they afford a conceptual framework for the study of historical process. To place a society in a central or transitional position in relation to one or more stages is a necessary preliminary step to inquiry, not a straitjacket that limits it."

- 96 Krader L. 1972.
- 97 The process of acquisition of knowledge occurs as an ascent from concrete to abstract truth and from incomplete to more complete knowledge. Marx and Engels themselves did not regard all their constructs as established once and for all. They were continually returning to questions previously considered and making "changes" in their conclusions. As early as 1891, corrections were made by Engels in the fourth edition of the "Origin of the Family", and contrary to what western scholars say, there is not a single Soviet scientist today who would insist that all of Morgan's and Engels' concepts are right. In particular no Soviet scholar accepts Morgan's thesis on periodization, on the consanguine and punaluan family, or on the origins of exogamy. Engels again in the preface of the fourth edition of "Socialism Utopian and Scientific" writes: "the 14 years that have elapsed since the appearance of Morgan's magnum opus, have substantially enriched our material on the history of primeval human societies... As a consequence, certain of Morgan's individual hypotheses have either been shaken or were actually overthrown; but the newly gathered material has nowhere led to a need to replace his basic tenets by others." So, if Soviet ethnographers do accept some of Morgan's concepts, it is only because contemporary scientific data corroborates them. (for discussion on the subject see also Gellner E., *The Soviet and the Savage* 1975, and comments by Bromley Yu. Krader L., Newcomer P., Pershits A., Petrovaverkieva, S. and Semenov Yu.
- 98 There is some considerable terminological variation in the literature concerning the notion. Thus Poulantzas (1973) defines

a mode of production as a combination of economic, political and ideological instances; by contrast, some others define a social formation as the combination of the economic (production relations), and the political/legal and ideological superstructure; similarly, although from a different theoretical position, Hindess and Hirst (1975) define a social formation as the mode of production together with its economical, ideological and political conditions of existence; Balibar (1970) defines the articulation of the mode of production with ideological and political instances as the social structure and reserves social formation for the combination of different modes of production. (Wolpe E. 1980, Legros D. 1977, Soviet Anthropology and Archaeology 1965).

99 Marx in a passage from Capital writes "within a family, and after further development within a tribe, there springs up naturally a division of labour ..." Engels, in a footnote to the third edition of Volume I of Capital explains: "... subsequent very searching study of the primitive condition of man led the author to the conclusion that it was not the family that originally developed into the tribe, but that, on the contrary, the tribe was the primitive and spontaneously developed form of human association..."

100 The subject of course is a continuous source of discussions, debates and different positions both from Marxist and non-Marxist scholars and the literature connected with it almost endless. As well as works cited in the text, a number of others are included in the annotated bibliography.

101 N. Butinov, V. Bakhtov and V. Kabo hold the view of collectivism but describe its concrete forms differently, that is the commune as principal social organization of production and not the clan.

Semenov's conception is that the beginning of the primitive communal order coincides with the establishment of the clan system and that clan relationships are relationships of production. Ter-Akopian agrees with the opinion regarding the undivided dominance of consanguine relationships but evaluates their content differently: clan relationships are regarded as the result of the production of man. (see especially, Danilova L.V. 1971).

102 Krader L. 1972.

103 The whole literature is extensive and of course it cannot be mentioned here. For references and relative bibliography see, amongst others, Diamond S. 1972, Fried M. 1967, Lee R.B. 1980 a and b, Leacock E. 1982, Woodburn J. 1972, 1980, Soviet Ethnographic Studies, 1982.

104 Wessman J. 1981, Cohen C. 1982.

105 Unpublished M.Sc. F.P. Stathari 1981.

106 As Mendel (1977) writes: "... cette thèse n'oblige pas à postuler une incroyable mutation touchant de sa grâce le cerveau animal et le transformant en "cerveau symbolique" héréditaire. Car la chasse existe déjà dans certaines espèces animales: chiens, loups etc., qui appliquent des tactiques d'interrelations. C'est la possibilité d'une reproduction de cette chasse sur un mode élargi qui se trouverait bloquée chez les animaux par la solidarité dynamique du corps tout entier... Ainsi un processus de nature homogène ce serait poursuivi dans notre espèce - processus dans lequel hominization et humanization signifient une seule et même chose: c'est, en effet, le rapport social de production humain qui aurait été l'agent sélectif des mutations biologiques, dans

la mesure où ces dernières auraient rendu plus effi^eçaces, quant
à la capture du gibier, l'organization collective du travail.."

107 Bates L.F. 1984.

CHAPTER 2

Demography and Population

2.1 The Concept of Demography: general considerations

The central task in studying population development is to bring out the motive forces and laws governing this process.

All social sciences require historical evidence, in so far as they deal with social reality, or attempt to falsify or verify general theoretical models by reference to this evidence. This is essential, since any kind of data collected for the purpose of any social science, however contemporary, becomes "historical" one moment after it has been collected. Indeed by the time that most of it is ready for use for the purpose of current analysis or future trends, it is already likely to be historical, for normally there must be a time lag between collection and utilization. To this end there is no sharp distinction between historical and non-historical source material. In practice there is some distinction, in so far as most data about the "present" produced for current use in the social sciences, whether by official or private inquiry, experiment or some other way, can be planned to meet a specific purpose, and the inquiry can be extended or elaborated or modified to meet this purpose. Historical evidence has to be taken as it is given. We cannot add to it, though we can try to extract all that is possible from it, including the answers to questions which were not in the mind of those who compiled it. Evaluation in history consists in broadening the range of human memory.

The construction of any general and unified theory should in the last analysis be based on facts and their interpretation. What are facts? The correlation between conception and interpretation of "facts" is complicated, even if we give the term "fact" a strictly one-dimensional interpretation. "Mere facts", pure facts, hardly exist. The problems are real because they need to be solved. One must assume that the existence of a certain conceptual framework determines the very way "facts" come into existence. Objective facts are surely independent of human consciousness.

However, this may create the illusion that there are pure scientific facts which exist in the absence of human interpretation. If only recognized and absorbed in the usual non-critical way, "facts" cannot play an important role. They attain significance by becoming a part of the conceptual framework, their objective character being a basis for their interpretation. Thus, any theoretical construction expresses certain trends of thought which are in the last analysis socially oriented; that is, the understanding of the social needs and of the internal logic of the development of social reality, which is by its very nature contradictory and essentially dialectical. Here the debate on a "new" form of demography involves by definition the nature and concept of the historical approach. To define a concept does not mean to find out the sense imparted by men to the corresponding term. To define a concept means defining the object. From the standpoint of materialism it is one and the same thing. To define demography means to define the population. The main difficulties in studying complex, evolving objects lies in finding a way of correlating two essentially different planes, those of "functioning" and "develop-

ment" of the object. In studying the functioning of the object we concentrate on those characteristics which guarantee its stability and immutability in relative variable conditions. In analyzing development we are interested, above all, in those characteristics and parameters of the object which motivate various changes in it and, at the same time, preserve intact those essential properties and qualities which give the object identity. All societies do not simply evolve into increasingly advanced forms or devolve into more involuted forms by means of their own internal mechanisms. There are, rather, various forms of interlocking cycles of expansion, accumulation and decline. We must examine the evolution of a population distributed in a specific way with respect to other types of structures in a larger totality.

The mechanisms of ensuring "stability" and "development" operate largely independently of each other and are connected as a rule with different components of the population. It follows that three types of elaborations may in principle be formulated in relation to the evolving object: a) analysis of the history of the object irrespective of its structure; b) analysis of the structure of the object regardless of its history; c) structural and genetic analysis of the object, which may take the form of explaining the history of the object through its structure and that of explaining its structure through its history. As each of these elaborations is significant, it would hardly be correct to give a priori preference to any one of them. The structure and functioning of the object are just as real as its history; and that is why a special emphasis on the former or the latter is not determined by the properties of the object as such, but by the methodological considerations and interpretations. The problem then is to

find out in what shape and form the historical conditions of population's emergence and development are preserved at the different stages of its formation. With this is connected the essential fact of the dialectical relation between the historically preceding conditions of appearance and emergence of the population and later consequences that have developed on this basis. Here again, a "logical" problem is transformed into the problem of motive forces, contradictions, and law governing the correlation between historical development and its own results.

It is of critical importance to note that demographic analysis has been lacked any basically historical and evolutionary perspective from its beginning.¹ It has tended to advance along the road of static constructions and statistical probabilities, reducing its content to general and abstract components, assuming "other things to be equal", and hoping that reality can be approximated by gradually relaxing or elaborating these assumptions. However "proof" in the traditional legal sense is not possible.

The correlation of two or more statistical time-series in itself can establish only a connection between them, but not a causal connection. In these sectors demographers have not so much developed techniques and methodologies of their own, but rather adopted and adapted those developed in other social or even natural sciences. But, naturally "other things are never equal" and social reality is too complex for such models to describe or analyse it adequately.

Population is not an abstract entity; by population development we understand here the qualitative and quantitative changes caused by processes taking place in a society as a result of powers and relations which are not only biological. We do not live in societies which aspire

to stable equilibrium. We have to bear in mind the forces which tend to "destabilize" societies as well as those which maintain them in being; the causes which ensure the "equilibrium" will never be permanently stable, and precisely those which cause societies to change over time i.e., the ones with which history, and demography as a history of population, are essentially concerned.

An example can be seen in the discussions of population growth where population growth, far from being an independent variable, is largely dependent upon a social demand for labour. Perhaps the greatest mystification of population dynamics and social evolution has been evident in the past 150 years. During this time capitalism matured and entered its highest phase, imperialism, and the population growth rate increased from 0.4 percent per year to 2 percent. Malthus², in response to the increasing human debris of eighteenth-century capitalist production and as an attack on the Poor Laws, argued that,

"the power of population is indefinitely greater than the power in the earth to produce subsistence for man. Population, when unchecked, increases in a geometrical ratio. Subsistence increases only in an arithmetical ratio. A slight acquaintance with numbers will show the immensity of the first power in comparison with the second.... By that law of our nature which makes food necessary to the life of man, the effects of these two unequal powers must be kept equal. This implies a strong and constantly operating check on population from the difficulty of subsistence. This difficulty must fall somewhere, and must necessarily be severely felt by a large portion of mankind...."

It was of course the proliferation of the "lower" classes that bothered

Malthus primarily.³

As we shall see later, to Marx and Engels, interested as they were in discovering the basic laws of social change, and in particular the "law of motion" of bourgeois society, any explanation of social phenomena such as overpopulation under capitalism in terms of an "eternal law" was bound to appear superficial and inadequate. This was the basis of their main general criticism of Malthus's theory.

Even in the case of those laws and conditions which have had a limited validity throughout the whole history of class society, Marx and Engels maintained that the main interesting and important thing about them was the different ways in which they operated in different types of society. Thus, they denied that "the law of population is the same at all times and at all places." On the contrary they maintained "every stage of development has its own law of population."⁴ It was not enough, of course, merely to assert this - it had to be "proved". Marx and Engels do not seem to have made any direct attempt to formulate the laws of population appropriate to earlier forms of society. They considered that the most important job they had to do was to formulate the actual law of population peculiar to the present bourgeois stage of development, and to demonstrate that this new, specific law fitted the contemporary facts better than the old "eternal" law which Malthus had put forward.

Capitalism is a mode of production in which the continued expansion of production is a prime mover. But this expansion is not to accommodate the potential population increase as it may have been in classless societies; on the contrary, it is for the profits of a few. Great quantities of labour are necessary for the production itself, but also

for keeping wages low with a reserve army of competition for jobs.

Marx sums up this process of capitalist production:

"The labour population therefore produces along with the accumulation of capital produced by it, the means by which itself is made relatively superfluous, is turned into a relatively surplus population; and it does this to an always increasing extent. This is a law of population peculiar to the capitalist mode of production; and in fact every specified historic mode of production has its own specific laws of population, historically valid within its limits alone. An abstract law of population exists for plants and animals only, and only insofar as man has not interfered with them."⁵

Capitalism thus requires an expanding population because it requires an expanding production. But for those not producing under capitalism, for those in control of production or having an adequate share of the proceeds of production, population growth curves are relatively flat. The steep growth curves of the working classes and underdeveloped parts of the world are essential primarily because of the demands of capitalist production, and it is only mortality that has kept the growth curves from being even larger than they are. A decrease in mortality will not substantially alter the causes for the high birth rate, nor will the basic population dynamics alter the causes. People are not poor because they have big families; they have big families because they are poor. To be sure, it is producers that are involved in decisions about the increase or decrease in family size, but it is the dynamics of capitalist production that dictates which decision makes rational survival sense to these producers. If however, producers were in control of production,

the lessons of history are clear - the population growth curve would flatten considerably.⁶

"Overpopulation" is thus not a problem of too many people, but of unequal forms of organization, distribution, exchange and production. This implies the fundamental significance of the demographic theory if it is conceived as an historical category and not included in a static, synchronous, functionalist scheme. The finest mathematical theory in that case does not represent many situations in real life in which different, interactive strategies are developed. Available statistical data shows that the birth and death rate coefficients and the natural increase or decrease expressed by the difference between them show great fluctuations. What they do not show is the conditions and reasons under which this happened.

2.2 The Demographic Question (methodology and current theories)

The population characteristics are conventional divisions of processes observed in virtually all populations.

Growth and size are based on the interaction of the birth rate, the death rate, and the net migration rate. Positive growth, decline or equilibrium will be a function of these vital events. Distribution and density add the dimensions of space and location. Composition and diversity include all aspects of population and inter-population structure including genotypic, sex and social diversity. The units of analysis are comprised of a hierarchy from individuals to higher levels of aggregation. Population characteristics can be analysed at virtually all levels of aggregation, but a particular

research problem may dictate selection of one or more units. The unit selected may often be dictated by the data available, but for any given problem some units will obviously be better than others.

Demography concerned with the characteristics of whole populations or sections of populations deals with three types of questions: a) the level of performance of the whole population in one particular unit of time - e.g. number of births, deaths that occurred in one day, year, century; b) the comparative performance of various populations, or sectors of one population, in one particular unit of time - e.g. the number of births in city centres versus that of suburbs, the number of deaths etc.; c) the performance of the whole population, or sectors of it, in one unit of time as compared with earlier periods.

Changes in the numerical strength of populations result from two main groups of factors. First, the characteristic features of their natural reproduction (primarily the correlation of birth and death rates specific for each society), second, processes of the division or amalgamation of peoples or of their component parts. One of the major elements in demographic study is the analysis of the numbers of interacting peoples, the quantitative evaluation of the composition of the groups. Thus even when the total population is large the analysis generally deals with subdivisions of the whole. Different problems however, will require different population levels of analysis in the hierarchy from local to the species population, and in this sense the definition of the population becomes arbitrary and critical for comparative (or non-comparative) studies. As long as internal comparisons are being made, the population unit may be arbitrarily defined as problems and foci of interest, shift between migration patterns, re-

production, fertility, mortality or natural selection. In many cases different units will be appropriate. This does not mean that the definition should not be an operational one. However, even the local "reproductive" unit may be difficult to define; for example, recent administrative changes in South America, in the Amazon region, have produced artificial villages, which include several previously separate social groups with very different mating patterns. "Groups" may be administrative rather than interbreeding units. On the other hand, "variation" may in part be accidental and in part a reflection of differences in national principles; as an example of a contrast between the regions of one country, the common under-enumeration and under-registration of Black population in the southern U.S. in part reflect the whites' official sentiment that what happens to black Americans is not important enough to be recorded.⁷ These problems are unlikely to be solved by an exclusive concern with "pure demographic" data, and the collection, analysis and presentation of these, or the uncritical application of the latest mathematical models to populations, where the basic assumptions and factors can never be tested. This does not mean that mathematical models do not have any importance at all; their practical value is their application as the initial premise for concrete calculations. But they also have limitations and can at best be partially valid even at the level of such "self-contained" population processes as fertility, mortality or age structure. These "measurable" indices, which provide the bases of accuracy, associated with the best demographic statistics, however, are controlled in their rate and especially in their ultimate limit by such other factors as economic growth, social mobility, family norms, natural resources and

political organization. Thus demography may be primarily descriptive and quantitative, but until one sees the role of this in relation to other fields of inquiry, it may be difficult to comprehend the inherently interesting aspects of population study.

Despite some notable exceptions (mainly French and Soviet demographers) a widespread consensus seems to be a linear descriptive fashion of sequential change in a set of "factors" whose covariance, submitted to various measures of statistical significance, is somehow assumed to explain itself. "Population differs from other topics of historical or ethnographic analysis in that it is to some degree a self-contained process, invariant irrespective of the culture context", W. Petersen⁸ asserts; and he continues,

"Since any person aged 25, if he survives one year, will be 26 years old, a series of reported ages can always be checked for internal consistency. Since the population of any area is equal to that population at an earlier data plus the intervening natural growth (differences between births and deaths) and the net migration (differences between immigration and emigration) if some of these elements are known the other can be derived or estimated. This equation, $P_1 = P_0 + (B-D) + (I-E)$, simple as it is, has been most useful in practical demography. Since in any society infants and the elderly are more likely to die within a year than adolescents and young adults, and since child-bearing is physiologically limited to "females" in the same favoured age range,⁹ there is a necessary relation among mortality, fertility and the age structure. As A.J. Lotka pointed out as early as 1907, these three elements of any

population are associated by the following equation:

$c(a) = be^{-ra} p(a)$, where $c(a)$ is the proportion of the population at age a , b , is the birth rate, e , is the base of natural logarithms, r , is the annual rate of increase, and $p(a)$, is the proportion surviving from birth to age a . In other words, if two of the three factors are known with a given degree of certainty, the range of the third can be stipulated."

Reality is much more complicated. In a demographic analysis no real progress can be achieved until general estimates for birth/death rates are broken down, and specific socio-economic relations are distinguished and compared.¹⁰

Beyond local reconstitution studies, most demographers have accepted nation-states and their legal subdivisions as appropriate units of aggregation and analysis. The compilation of routinely generated statistics by government offices virtually compels the adoption of state-territorial units, at least as a first step. For most of the Western European states, viable demographic data exists from the mid-nineteenth century on. National estimates for earlier periods have been developed by ingenious but still very problematic methods of aggregating and weighing local family reconstitution studies, with data generated in turn from a great variety of local sources, originally recorded by officers of church and state.¹¹

Larger conceptual problems persist for that type of demography which adopts national and provincial units of analysis without any sustained attempt to generate regional and class breakdowns on the basis of relevant socio-economic categories. The multi-class and mixed-region totals which are compiled, statistically manipulated and

interpreted, inevitably mask structural variation along these lines. The result is an excessive preoccupation with national comparisons (the French vs the English pattern). Class and regional variations are generally treated as an afterthought in a framework which is implicitly premised on a conservative cultural diffusionist assumption; lower classes and backward regions lag behind their superiors, but eventually follow them on the road to modernity and progress.

The economic and political crisis of western society and the special features of the demographic situation in capitalist countries since World War II have caused a certain evolution in the traditional views on population. Instead of the definition of the subject-matter of demography common in the 1930s and 1940s as "understanding of human populations and their general movement", modern demography defines its field as "the empirical, statistical and mathematical study of human populations",¹² and as the study of the size, territorial distribution, and composition of population changes, which may be identified as natality, mortality, migration and mobility.¹³ According to the U.N. Demographic Dictionary, 1958, "demographic analysis requires precise data, and in order to acquire precise data it is necessary to have coherent concepts and definitions of events. For this reason there is a set of concepts that has been adopted by demographers and has generally agreed upon definitions." Such definitions exactly support the traditional view "considering demographic processes solely in concrete form; moreover, they stress the autonomy of demographic processes, by reducing the theory of population to an analysis of the linkages between the main demographic indices. The roots of such an approach are in Keynesian and Neo-Keynesian conceptions of the place of population

in the economic and social development of society, according to which population is an "autonomous factor of economic growth" with a "decisive significance" for social development. In fact, we meet a repetition here of the main Malthusian assumption.¹⁴

Malthus's theory of population, in various modernised forms, is still followed to-day, particularly in the United States. The basic idea of the neo-Malthusians is essentially the same as that of Malthus himself - that population tends to increase faster than the means of subsistence. Indeed such a supposition makes it possible to conclude that there is a disparity between the socio-economic and the demographic, as if these two dimensions of social relations were materially separable under capitalism or elsewhere, and as if the lines of causality ran, undialectically, only one way from the demographic to the socio-economic and are, in this way, irreversible.¹⁵

In fact, this is never more than an empirical formulation untenable or at least presenting insoluble problems when we come to analyze population characteristics, their function, and their relation. In this case it is difficult to contrast socio-economic and demographic values as though they were two "institutions" with different spheres of interaction. One can already perceive some of the dangerous assumptions of the empiricist method. On the one hand, "institutions" are defined by their apparent functions, and on the other, it is presumed that distinct "institutions" are necessary to carry out distinct functions. The epistemological consequences of such assumptions are critical because, as we shall see, they preclude the construction of theories, like the "demographic transition" theory, or the biological one which cannot accept that identical population's functions or rates may have

different institutional "forms" in other societies from the ones they take in societies characterized by the capitalist mode of production (and reproduction).

Another point of concern is related to demographic structures. These structures are not "prime movers" but rather the combined result of the action of several deeper levels, of a hierarchy of causes, the most important of which is again the mode of production; that is to say, the productive forces and the nature of social relations which make up the infrastructure of the society. The significance of the fact that demography is the synthetic result of the action of several levels, (Fig. 1) of a combination of causes of varying importance, must not be underestimated. It means (and it is in this that the complexity of the analysis of the demographic structures lies) that every type of social relations, each interconnected level, is subject to the functioning and reproduction over time of specific demographic conditions. The population of a society is the "result" of the combined action of these specific demographic conditions within the given socio-economic system. In the early 1960's it was probably no exaggeration to state that the vast majority of demographers would have accepted the concept of "demographic transition". This paradigm - still used as a fundamental "research tool" in many studies - has run into considerable difficulties, now widely acknowledged, in the light of the wealth of new local studies and information of the demographic transition in western Europe.

In essence this theory held that in traditional societies both fertility and mortality rates were "natural" and high, tending to counterbalance one another in the long run so that the size of a community was checked at the limits of the means of subsistence available

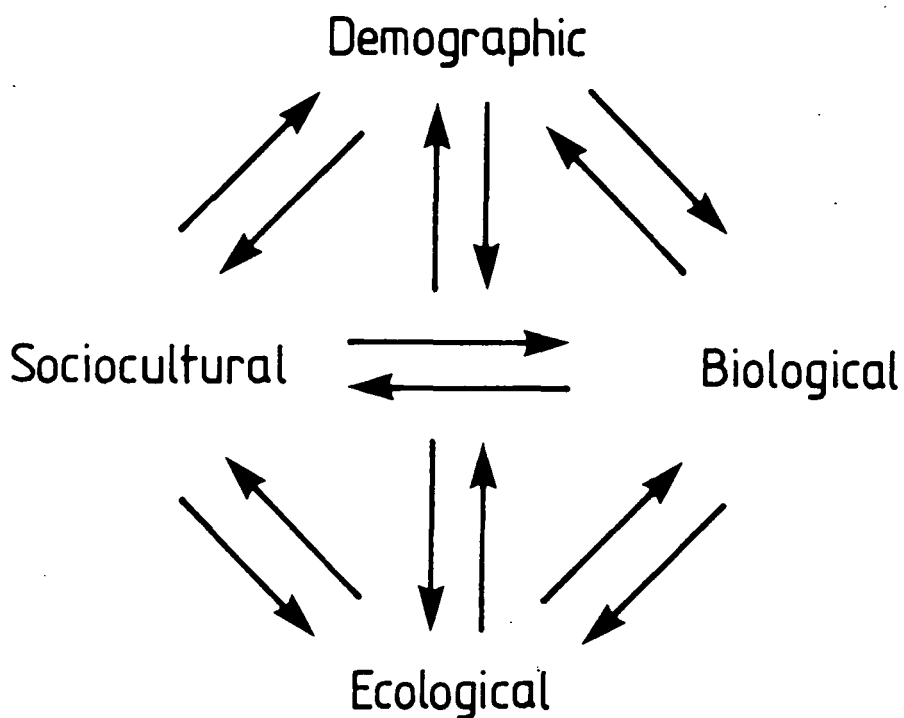


FIG 2.1 : Relations between demography, ecology, biology and sociocultural systems.
(adapted from different authors and F. Hassan 1980)

to it.¹⁶ In other words, prior to development (as exemplified by the Industrial Revolution) population was either not growing or growing slowly. With the initiation of development, parity between births and deaths is disturbed and mortality decreases as a result of a wide variety of interlinked causes including advances in medicine, technology and available resources. Later, the rate of population growth declines to a new "steady level" as the birth rate decreases. This decrease in the birth rate is caused partially by higher consumption expectations and the development of new social values. At first, this posing of the problem may appear as a counterposition to the traditional Malthusian conception of overpopulation and the primacy of the biological elements in human reproduction. In fact, however, this is not so. "Transitionists" and the Malthusians have a common base: the initial assumption that the social relationships and problems in a population have a general character that does not depend on the social system - exemplified and formulated "outside" the socio-economic organization of the society. There appear to be at least four discernable problems in this context: the first has been in determining the reality - usually assumed by demographers - of the lower asymptotes where high mortality and fertility are roughly equal. Anthropologists who have actually tried to find such societies have not been particularly successful.¹⁷ Palaeoanthropologists have been showing that the transition between hunting and gathering and agriculture has been a gradual process characterized by societies with moderate fertility and mortality rates, not uniformly high rates as presumed by the theory. Ethnographic data indicates a wide variety of mortality and fertility rates for present-day non-industrialized societies.

The second problem is that the transition theory was originally formulated to explain data from Western Europe. The characteristic rates need not be universal. Anthropologists have been showing that demographic characteristics are neither geographically nor temporally uniform.¹⁸ Thirdly, there is the argument that mortality drops as a result of the new medical techniques, and that fertility declines after industrialization. It is now clear, however, that even in Western Europe the decline of mortality preceded medical technology while the decline in fertility preceded industrialization. The decreases in pre-industrial populations appear to be the result of culture contact with Western civilization and the consequent epidemics, wars and slave trades.¹⁹

The rise of the Third World population, on the other hand, was a response to new economic opportunities, that is, labour traded for cash goods, rather than a transition. High fertility is a family response to the new demand for labour - by colonial powers. The last problem concerns the upper asymptote of the transition where low mortality and low fertility should once again be approximately equal. Demographers have had difficulties finding quantitative support for this. Transition theorists have tended to look toward modern industrial societies with capital-intensive economies. Anthropologists, however, have recently pointed out many examples of "primitive isolates" which are neither industrial nor capital-intensive, but which meet the transition theorist's criteria of low fertility and mortality.

It is evident that there are a number of social factors that make the demographic transition model an inappropriate tool for prediction. While it appears to be that the stages may exist in reality²⁰ the sequence

of events in one culture or country is not necessarily going to provide a good productive index of the sequence in another.

To sum up, it would appear that all societies, both present and past, were capable of regulating growth to some extent, and often did so in order to prevent over-exploitation of perceived available resources. While it does seem to be true that cultural complexity has historically led to increasing population size, and, to improved resource utilization, the specific processes are more varied and complex than first appears to be the case. The slow, steady growth exhibited in Fig. 2 is a trend based on the world's population. To attribute this curve to individual societies in various regions would be inappropriate.

The question has been taken one step further analytically by limiting interest to stages of population growth and inquiring as to whether population pressure causes or results from socio-economic change.²¹ Questions of population pressure become more evident if the nature of the pressure is specified. Population pressure though is not necessarily synonymous with the ecological concept of carrying capacity, but refers to the presence of a "strain" on one or more existing resources and can occur well below carrying capacity. Resources can be viewed as relatively elastic or inelastic on the basis of their renewability. Regulation brought about when a population reaches carrying capacity is presumably a common occurrence in non-human populations and would not be expected with human populations. Found (1971) and others have considered general models for a single resource but these tend to deal with conditions that only pertain in a modern market economy and are not applicable to all situations.

It is social production that marks the critical disjunction between

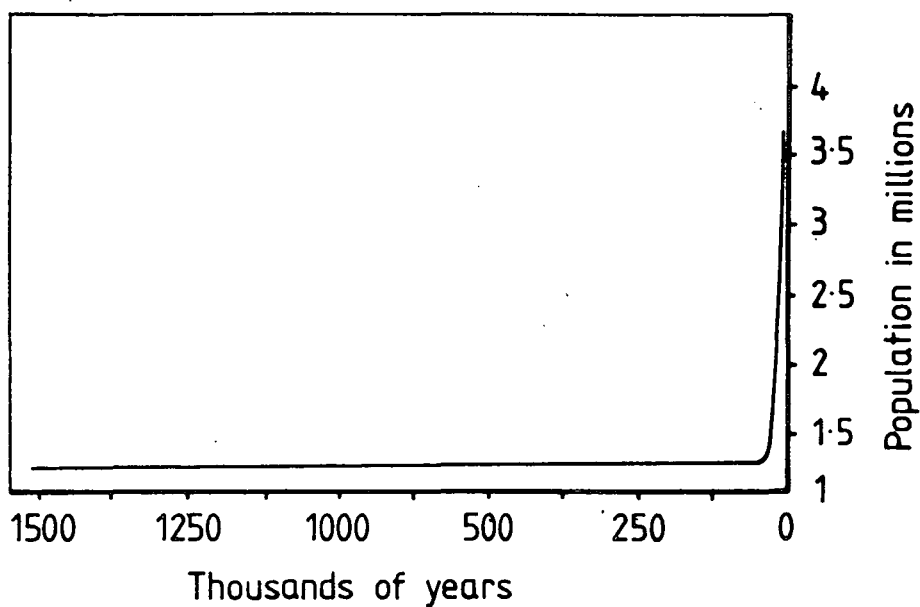


FIG 2.2 : A curve showing the estimated growth of the human population from 1.50 m.y ago to the present. The great majority of the growth has occurred within the last 300 y. (adapted from Ascadi-Nemesceri 1970, Deevy 1960, A. Swedland 1975)

human society and other animal societies. It is the ability of human society to produce subsistence, rather than control populations in order to subsist. Such arguments can be tested with selected facts of population growth and population dynamics in human history; social production is that group subsistence activity which involves decisions about different labour allocations.

This means the awareness of alternatives, the ability to value labour, and consequently to plan and thus produce activity. Social production cannot simply be reduced to environmental or biological "dependency". The critical cognitive factor in production and growth is the recognition or cognizance of labour potential, which could be described in fact as the emergence of consciousness, the objectification of work. This social activity was previously unknown in evolutionary history, and it effectively emancipated society from population control by biosocial means. Population growth could be accommodated rather than controlled. Social production enabled the population growth of producers to play a progressive, rather than a limiting, role in the future change of society. With the cognizance of the value of labour comes the value of humans as social individuals and potential producers. It is decisions about allocation to secure greater returns from labour investment that mark social production, for these enable the group to provide for more members, members whose being is now significant. To utilize labour in this manner is to produce.²² The objectification of activity (and thus of people) followed on, and emerged from actual activity. It was born of a struggle between the organization of activity based on biosocial requisites and dictates, and the organization of activity which challenged

or rejected this. The particular type of activity did not change significantly. But organizationally the differences became immense, and this had an effect on the demographic pattern.

Studies in general population growth emphasize, along with environmental variables, the role of genotypic differences within populations. For a long time biologists have tended to ignore the socio-cultural factor in human adaptation. The Biological reproduction was taken as a boundary condition for social reproduction. Natural selection, for example, has often been compared to a "sieve" which retains the few useful mutants and lets the harmful ones be lost. This analogy is seriously misleading, and within the framework of modern biological trends, it is highly deterministic and selectionist.²³ If it is true that every biological event is a moment in a given life, it is equally true that it can only be understood when re-inserted into the totality of that life, and that every such event is also subject to the influence of the conditions of the time. In the case of human populations, history is not simply an accumulation of past events - biological and other. It is also - and perhaps especially - the consciousness of such an accumulation. An understanding of the population theory underlying this is usually missing. It may be asked, of course, whether all the systems, divisions and subdivisions that make up the texture of that sort of biological discourse are not "fictions" substituted for reality in order to obtain a "workable" image, partially emptied of substance, but accessible to the operations of a "scientific logic", itself founded upon a conventional principle of identity - a convention with which, however, human reason seems unable to dispense.

To cite an example: had it been technically and physically possible in 1800 to examine the ABO groups of all the inhabitants of the Fiji Islands, the survey would have shown the blood group B gene to be present at a frequency of about 9%. Such a survey today would give double the frequency of about 18%. A change in gene frequency as great as this in any other species would suggest the operation of natural selection and, by analogy, one might suppose that individuals with the B gene were endowed with improved survival in the conditions of Fiji, greater successful fertility or a combination of both. This is not the explanation. It is a direct result of a succession of events of history, and illustrates a type of evolutionary process different from the usual interpretation of natural selection as favouring fitter individuals.

The reality is that the coming of the Europeans brought about a disaster to Fiji. With the introduction of firearms, the nature of native warfare changed, and to a society geared to a relatively harmless system of strife, the new barbarism brought losses impossible to assess. There is no conception of the number of men, women and children of all ages lost; but certainly many of the victims during that period were of the age groups of the greatest reproductive potential. A second effect of the European contact was the spread of epidemic disease. This was particularly high on the Fijians who, by reason of their geographical isolation, possess little immunity to the more usual infections of the outer world.

Had it occurred in any other species, it would be interpreted as interpopulation selection reflecting biological advantage in some characteristic. In this case, however, there is sufficient material

to allow examination of the mechanisms responsible for it, and to explore its dynamics. In a very short space of time, the human gene pool of a particular territory has become very much modified. There has been partial replacement of the indigenous presumably adapted gene pool by that from an "alien" population. This has been brought about by the difference in the demographic structure and behaviour of the populations. The demographic differences are a direct reflection of the cultural differences between them and their recent cultural history. There is no doubt that the changes in gene frequency in the Fiji Islands after the initial Indian immigration have been primarily due to interpopulation, differential mortality and fertility. Yet there is no evidence at all that they are selective, making for increased fitness and increased adaptation of the population to the Fijian environment. Instead, they represent the effects of intergroup cultural differences, which are of little, if any, relevance to the adaptive value of the individual's biological characters. This reasoning appears acceptable in respect of the fertility differential. It may be argued that cultural factors are not entirely responsible for the mortality differences, but that these have occurred in response to real but unidentified biological differences in ability to survive in the Fiji environment; but many other situations of populations replacement that have occurred demonstrate the cultural element in differential mortality. What would have happened say if the Tasmanians or the Amazon Indians instead of the Europeans had the guns? Is there any "demographic", "biological" or "ecological" explanation for the fate of these populations, whose mistake was simply not to have invented weapons equal to those of Europeans?²⁴ It seems fairly clear that the inclusion of the historical

dimension is mainly the recognition of the dynamic nature of social living and the need to build "change" into these explanatory models. (Table 2) Rather than seeing demographic processes and variables as an "inherent tendency" of human populations, it is much more instructive to see this tendency as a human possibility which is encouraged by certain institutional (in general) events, but equally may be discouraged by other events. This certainly leaves a great deal still to be understood, accepted and explained. The question of "reality" in scientific explanation may seem in fact rather scholastic; but it is much better to try to formulate the right questions than to offer the wrong answers.

2.3 Palaeodemography: defining the question

Given the methods and concepts outlined above, it is not surprising that Palaeodemography has been formulated more or less along similar lines. The result was a narrow, mechanical approach to pre-historic populations and an excessive preoccupation with the "descriptive" categories of demography, directly analyzed by "fixed" quantitative techniques, without any real consideration for the relationships between population dynamics and socio-economic processes. Moreover the rise of ecological and biological overdeterministic paradigms within archaeology was limiting further analysis of the diverse, interacting structures involved in population development.

Social patterns that should have theoretical explanations, not in standard "individual" selection terms alone, but in relation to communal activities and the necessity for group living, were almost totally

P O P U L A T I O N	Short-term	Long-term
Prehistoric		X
Historical	X	X
Contemporary	X	
Simulated	X	X

Table 2. Population types for the study of change. X indicates the suitability of each type for either short-term or long-term change. Short-term refers to years, decades or generations. Long-term refers to multiple generations, centuries or thousand of years. (adapted from Swedland 1978)

ignored and dismissed, even in the cases where the necessity for their investigation was mentioned.²⁵

According to Jacob (1970):

"Evolution accounts for the fact that integration at the level of organisms and the relationships between organisms consist in an exchange of encoded information and not in interaction between molecules.... Culture forms the second genetic system which is superior to heredity and that is why the code in these new integrating units goes beyond the schema of biological explanations. Hence research on man and society is not reducible to biology, even though it cannot be conducted without reference to it."

It is certain that palaeodemographic theory bears directly on an understanding of human cultural behaviour. The analysis of that behaviour and its evolutionary meaning must necessarily be sought in demographic variables such as population size, density, growth, fertility-mortality rates, age-sex composition. It goes without saying that the results obtained will be indistinct and vague, inasmuch as they are approached from "outside" without evaluation of their intrinsic composition. The question immediately arises as to how we would comprehend culture and change if not through preliminary defined types. The root of the contradictions and difficulties lies in the limited character of the traditional strategies that are being developed in contemporary demography, and equally elaborated in palaeodemography; accepting such an approach really means a "Farewell to Palaeodemography".²⁶ The usual generalizations concerning the demographic characteristics of prehistoric man often strike one as too broad,

extrapolations from a few non-random cases to a supposed typicality. Graphic depictions of human population history usually shows an extremely low and uniform rate of increase over the Pleistocene, and the rate of growth sharply increased at the Pleistocene-Holocene transition with the advent of agriculture. The demographic transition model - as we have seen - assumes that, in its first stage, birth and death rates are in homeostatic balance preventing any significant population growth. Mortality is supposed to be high and natality about equally high. There seems to be some consensus (based among other things on demographers' views) that there was a 50% mortality between birth and the beginning of the reproductive period. (Petersen 1965, 1975) A more detailed look at the human past - taking into consideration other factors as well - can give us a quite different understanding of population dynamics. From the statistical point of view, the analysis of length of life, mortality, fertility and population structure in general, if based on a single series, is actually a monograph and consequently its results cannot be generalized for long periods or larger regions without reservations. (Tables 3-8) Palaeodemographic analysis relies for the most part on the anthropological material of one-time populations, that is on skeletal finds.²⁷ Perhaps one of the major contributions of palaeodemographic analysis was the introduction of model life tables. (Ascadi and Nemeskeri 1970) These tables are based on data from several populations, thus minimizing the statistical and cultural "causes of error" evident in many archaeological samples. The life table represents the mortality history from birth to death of a cohort, that is, a group of people born at one time, and the life expectancy at various ages can thus be determined. However one of the

	A	B
Palaeolithic	19.9	20.6
Mesolithic	31.4	26.9
Neolithic	26.9	19.1
Copper Age	28.4	22.2
Bronze Age	32.1	23.7
Iron Age	27.3	23.4
Classical Period	27.2	24.7
Medieval Europe	26.1	25.3

Table 3. Life expectancy from various periods in human history.

A = life expectancy at birth

B = life expectancy at age 15

(Source: Weiss 1973)

Age (X)	Sinanthropus type	Sinanthropus and Solo man	Neanderthal	Afalou	Taforalt	Vassilievka	Fofonovo	Maghreb type
0	13.0	(14.6)	.	.	20.8	.	.	21.1
10	23.3	.	21	.	29.9	30.8	.	31.2
20	17.9	22.6	.	21.9	23.9	22.8	29.8	24.5
30	14.7	17.1	.	16.7	20.4	20.0	24.1	19.8
40	12.5	12.2	.	11.3	18.2	17.3	14.1	16.0
50	11.0	8.1	.	6.4	12.0	12.7	9.7	12.2
60	-	3.7	.	.	6.8	9.8	7.7	7.7
70	-	-	.	.	3.1	3.7	4.1	3.5

Table 4 Ancient expectation of life (both sexes)

Source: Ascadi-Nemeskeri (1970)

Series	Total	Age-groups				
		20-29	30-39	40-49	50-59	60+
Neanderthal (Vallois)	100.0	30.0	50.0	15.0	5.0	-
Upper Palaeolithic (Vallois)	100.0	43.7	38.0	15.5	2.8	-
Afalou (ascadi- Nem)	100.0	21.9	21.9	26.1	22.9	7.2
Mesolithic (Vallois)	100.0	79.4	13.7	2.3	4.6	-
Vassilievka (Askadi-Nem)	100.0	29.2	22.2	16.2	14.3	18.1

Table 5 Comparison of percentage age distribution of Palaeolithic and Mesolithic series
(Source: Ascadi-Nemeskeri 1970)

	Age-group					
	Total	12-20	21-30	31-40	41-50	51-60
	N U M B E R					
Neanderthal	24	4	6	10	3	1
Upper Palaeolithic	86	15	31	27	11	2
Mesolithic	50	6	35	6	1	2
	P E R C E N T					
Neanderthal	100.1	16.7	25.0	41.7	12.5	4.2
Upper Palaeolithic	100.0	17.4	36.1	31.4	12.8	2.3
Mesolithic	100.0	12.0	70.0	12.0	2.0	4.0

Table 6 A comparison of distribution of death from the age of 12
(after Vallois)

Age	Number			Per cent		
	Neanderthal	Eurasian Upper Palaeolithic	Mesolithic	Neanderthal	Eurasian Upper Palaeolithic	Mesolithic
0-11	15	29	21	38.5	38.2	29.5
12-20	4	12	6	10.3	15.8	8.5
21-30	6	15	35	15.4	19.7	49.3
31-40	10	11	6	25.6	14.5	8.5
41-50	3	7	1	7.7	9.2	1.4
51-60	1	2	2	2.5	2.6	2.8
Total	39	76	71	100.0	100.0	100.0

Table 7 Distribution by age and death of the Neanderthal, Upper Palaeolithic and Mesolithic men
(after Vallois)

Series	estimated expectation of life at the age of 20 years.		expected age at death of males as a per- centage of females.
	Males	Females	
Solo Man	23	23	100
Neanderthal (Vallois)	15	5	140
Upper Palaeolithic (Vallois)	15.5	9.8	119
Afalou	26.8	16.8	127
Taforalt	23.7	21.0	107
Vassilievka	23.96	20.33	109
Mesolithic	8.6	6.0	110
Fofonovo	35.85	22.74	131
Together	19.1	12.7	120

Table 8. Sex differences in ancient expectation of life
(Source: Ascadi-Nemeseri 1970)

problems of the life tables lies in assuming that the skeletal collection from a site represents a single population without any migration and without constant age-specific death and birth rates - that is, a stable population. The situation does not often correspond to the demographic flux characteristic of many archaeological populations. (Angel 1969) Sampling, sexing and aging problems are an additional consideration in constructing life tables.²⁸ Mathematical smoothing and graduation of data may remedy these problems (Weiss 1973), except when the sample is exceedingly deficient or overstocked in a certain age group. It must be noted here that infant under-representation, which occurs frequently in archaeological samples, has little effect on the estimation of the probability of dying and life expectancy outside the infant age group. But the effect on the survivorship curve is very strong (Moore et al 1975). Ascadi and Nemeskeri (1970), when discussing model life table construction, point out that these models are built on the general characteristics of recent human mortality and, although not suitable for replacing historical data, are an excellent basis for comparisons and for reconstructing missing pieces of information. Indeed the summaries by Ascadi and Nemeskeri (1970) and Weiss (1973) are useful in showing definite trends of change in the life expectancy of adults, which is far below that of modern man in industrialized societies; however, the life span does not seem to have been much different (perhaps with the exception of the Australopithecines) as indicated by the survival of many individuals to what is considered today as old age.

Yet the conformity of facts and models suggests far-reaching conclusions. According to Ascadi-Nemeskeri;

"although the difference, between Palaeolithic man and modern advanced mortality conditions is fairly conspicuous, it appears mainly in the level of mortality rather than in changes of biological factors. (Fig. 3,4) The relationship of ancient mortality with the mortality of modern man, suggests that the biological rules of mortality of prehistoric man were not basically different from those of modern man. Putting it in another way this would mean that the biological possibilities, realized in our days, were "contained" in ancient man as well. The demographic revolution of recent times has brought profound changes in the level of mortality and its age structure. As a result, it has changed characteristic life span values as well. Historically, this change has taken place rapidly enough even in populations of advanced socio-economic structure.... All this shows that ancient man must also have been ready biologically to take this step."

For the survival of a population with a high mortality rate, a high rate of fertility is required. The question is, however, could fertility have been so high in ancient times as it is assumed to be. Doubtless, certain ancient populations may have had high fertility/mortality rates, but the possibility cannot be excluded that smaller or more isolated populations living under adverse conditions died out, and that other populations showed rapid multiplication and dispersion in proportion to ancient conditions. The very low rate of natural increase and the high, probably unrestricted, fertility of ancient times render a high rate of ancient mortality probable. (Fig. 5) Anthropologists however do not seem to agree with this picture; they

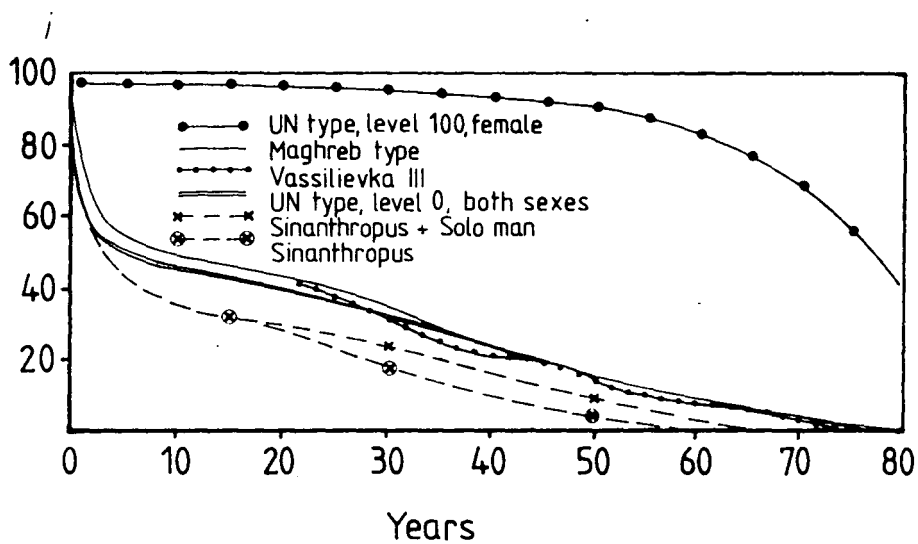


FIG 2.3 : Survivorship zone of ancient mortality (Ascadi-Nemesceri 1970)

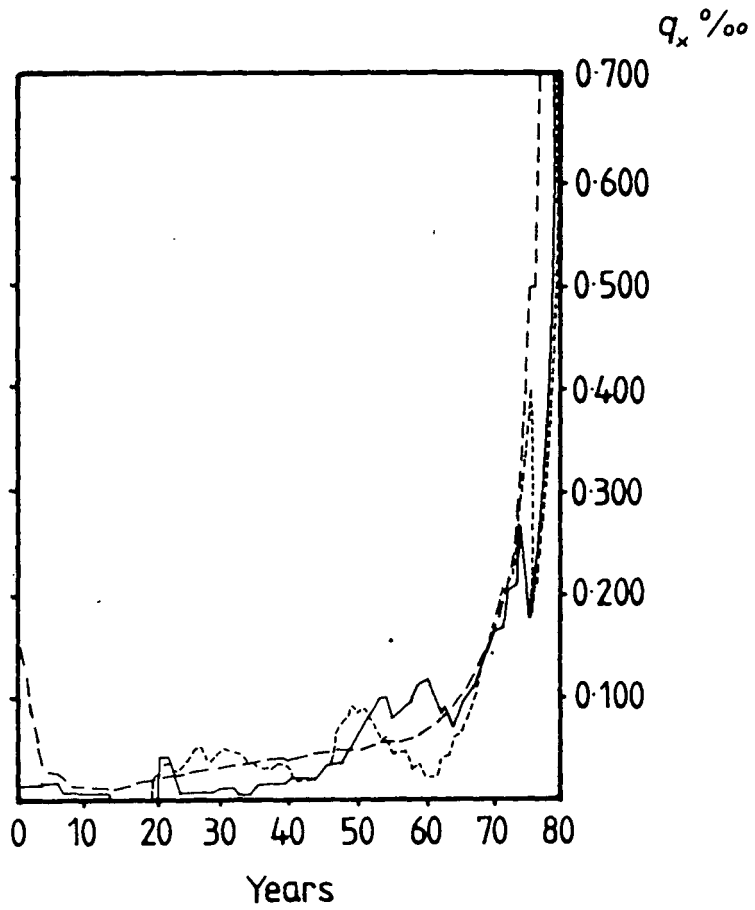
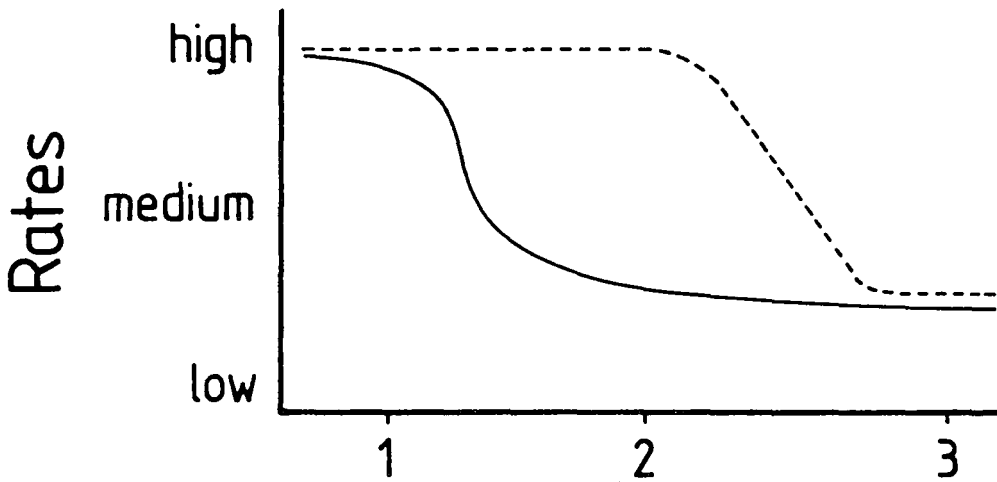


FIG 2.4 : Probability of death at various ages of ancient man (both sexes)
(from Ascadi-Nemescheri 1970)



- FIG 2.5 : 1. represent a period with high fertility - high mortality
2. rapid population growth; mortality decreases, fertility goes up or remains high
3. Mortality-fertility rates low (developed countries today)

(from Swedlund-Armelagos 1976)

tend to assume that the low growth rates through most of human history stem from low birth and death rates (Dumond 1975; Polgar 1972), and, despite controversy over the mechanism involved (see Cohen 1980; Lee 1980; Hassan 1980) - that the increased rate of growth at the Pleistocene-Holocene transition stemmed from an increase in fertility. Hassan (1981) supported that 1) prior to agriculture, mortality and fertility balanced; 2) during the initial phase of the agricultural transition, fertility increased and mortality may have either increased or stayed at prior levels; 3) fertility continued to increase while mortality declined, and finally 4) both fertility and mortality fell. Handwerker (1983) also argued that at least since the upper Palaeolithic, growth rates reflected moderate birth rates, that the increased rate of growth at the Pleistocene-Holocene transition reflected a decrease in mortality, and that with the development of agrarian societies the rate of growth declined as both fertility and mortality rose to levels which had not previously been attained. This first demographic transition of Homo sapiens reflected not the impact of reproductive decisions, but the impact of decisions to improve the level and reliability of income flow. On the other hand, although the life tables give the age pattern of mortality, it is important to augment this by an understanding of the way in which the actual forces of mortality bring it about.

It is conceivable that the predominance of the proto-mortality pattern began to wear out at the Upper Palaeolithic or the Mesolithic. The demographic situation began to change some 20-40000 years ago after the last glacial period; at similarly high fertility, better conditions have probably led to reduction of mortality, which resulted in a some-

what higher rate of population growth. Nevertheless, the density of population must have still been low. Estimates show that in an area of 100 square kilometres an average of at most 8-16 people were able to subsist on hunting and gathering alone. There is no doubt that the new type of mortality began to take shape under the economic revolution of neolithization in the Mesolithic. Such an increase is suggested by a number of studies.²⁹

Braidwood and Reed (1957), use analogies from contemporary societies as well as archaeological evidence to propose average densities of 3.0 inhabitants per 100 sq. mile, for hunters and gatherers of 12.5 for more specialized food-collectors of the Mesolithic, of 2.500 for the primary village-farming community stage, and of 5,000 for the preindustrial urban stage.

Nougier (1954) computes the population of France in various periods from the number of archaeological sites containing artifacts from different cultural horizons. His estimates are 10-20,000 inhabitants for the Lower Palaeolithic, about 50,000 for the Upper Palaeolithic and 5,000,000 for the later Neolithic around 3,000 B.C. There are a number of assumptions underlying these estimates which need to be examined. If population growth is affected by an increase in the techno-environmental efficiency, it is important to investigate the relative influences on the processes of fertility, mortality and migration through which any population change occurs.

"Save for unforeseen developments it would be futile to expect to have a working knowledge of the demography of ancient populations if we start only from the estimations of ages at death. The scholars who persist in this course will only obtain

artefacts. Early mortality of adults, over-mortality of women, lack of old people in those populations all these notions were born from the misinterpretation of the available data." (Bocquet-Moisset 1982)

Other aspects of palaeodemography that have hardly been touched upon deserve further study. Most people in most societies find that the conduct of their lives involves a good deal of daily struggle to attain some objectives, to maintain some situations, and to prevent others from developing. The point is that the decisions and behaviour affecting growth rates and other demographic variables always occur in the context of multiple economic, technological, social and ideological factors. Indications of large or small families, large or small communities, high or low regional population densities are only a part of the complex of considerations that enter into what affects demography. Subtle and fairly minor shifts in these complex interrelated factors can lead to relatively minor changes in fertility or mortality, which in turn affect pre-historic growth rates. The mathematics of population growth mean that even a very moderate rate of increase by contemporary standards, (for example, 5 per 1000 per year) cannot have been sustained for long periods, since this amounts to a ten-fold increase in about 460 years, a 100-fold increase in about 925 years and a 1000-fold increase in about 1390 years. What this implies for the Pleistocene is that unless the world's human population increase by more than 100-fold between 500,000 and 40,000 B.C., the overall average rate of increase cannot have been over 0.01 per 1000 per year. Again, unless world population increased by more than 100 times over between 40,000 and 7,000 B.C., the average annual rate of increase during that interval cannot have been

as much as 0.2 per 1000. Actually, overall rates were probably much lower; Deevey's (1960) estimates for 1,000,000 to 8,000 B.C. accelerate from about 0.003 to 0.03 per 1000 per year.³⁰

The difficulties for using existing archaeological data (or even documentary data) for estimates of ancient population densities or relative trends are well-known. Nevertheless, if we consider growth rates which depend on relative rather than absolute population estimates, some evidence is already available that indicates that sedentary food-producing populations themselves experience many very significant changes in their growth rates, and that periods of extremely slow or negligible growth, or even population decline, are interspersed with surges of relatively rapid growth.

Some population declines have been very abrupt and drastic, clearly relating to other factors than a truly marginal habitat, for human adaptation. Yet it is obvious that the trend in growth rates depends on a population's natural environment and socio-economic conditions, and not on historic chronology, with which it is only indirectly and loosely connected through evolution. It is readily conceivable that the mortality of a later population living under less or not fully developed economic conditions, could have been higher than that of an earlier population in better circumstances. Encouraging growth does not simply mean having as many offspring as physiologically possible, for the population dynamics must be understood in terms of the constraints and potentialities of the system of social production. With regard to the results of a less "statistical" nature, the demographic profiles from various local areas are highly variable in rates of growth and occurrences of peaks, depressions and stabilization phases as compared with each other. The factors responsible for these

variations are obviously complex and include local and extra-local ecological, and political events and processes. When the factors are analysed, persistence of certain elements - atypical or typical - can be discerned; the question arises as to why, on the long term, such elements persisted, taking under consideration conditions of change within a group, community or society. One of the possible answers is "utility" of a certain type or structure through time. The persistence of a certain type does not mean that that remains unchangeable, slight differentiations do exist. What that means once again is that we have to recognize, analyze and find the reasons for this "solidity". Within each of these categories exists a form of horizontal solidarity tied to a homogeneity of situation and an identity of the conditions to which each is submitted.

Each level of the formation of units as a consequence of a certain "direction" represents an aggregate or a juxtaposition of these units. A number of relations exist between these units (for example in exchange of goods, population movement et al), so that within each of these categories there emerges what might be termed vertical solidarity. Are those two "types" in contradiction or can they complement each other? Dialectics require in this case that external contradiction of "types" be interpreted as a mutually necessary manifestation of the deep rooted contradiction of each of them; this emerges as an inner identity of mutually exclusive "moments" or "facts" mediated through a relation to something else and reflected through something else, as an internally contradictory relation of a thing to itself, that is, as a contradiction in one relation and at one and the same moment of time. A real solution of the contradiction between the universal law and the empirical form

of its realization, between abstraction and concrete fact, can be found through revealing the concrete totality of conditions. The abstractly expressed universal law inevitably stands in relations of mutually exclusive contradiction to the fact under study.³¹ From the standpoint of dialectical logic, there is nothing to be afraid of here. On the contrary, logical contradiction is in this case only an indication and feature of the fact that the analysed object is understood in the abstract, that not all the necessary conditions of its being are as yet discovered. The logical contradictions necessarily arising in cognition are thus solved in the unfolding of the concrete system of categories reproducing the object in the totality of its necessary characteristics, of the objective conditions of its being. In this cognitive process, all the necessary conditions of the possibilities of the analyzed phenomenon are not simply listed or juxtaposed but conceived in their concrete historical interaction and the links between them.

These processes are normally not observable, but we deduce them from their effects and their mechanisms. In a way, we must look behind reality for explanation, behind behaviour for the process.

A process statement simply illustrates the dynamics, or specifies the relationship between the facts observed and the means by which these facts and relationships (and not others) came about. To explain phenomena then, we must be able to "generate" these phenomena - to specify the processes by which these phenomena came to be the way they are (and not any other way).

A social system or a natural ecosystem is therefore never an entirely integrated totality (as is claimed by functionalists).³² It is the totality whose unity is the provisionally stable effect of the

properties of compatibility existing between the elements which compose the whole, or between the different parts of a whole which compose the system. Of critical importance from this perspective becomes the matter of "change" within population dynamics; that is we cannot study (at least we should not) the effects of results of "change" without considering at the same time - and equally - the causes.

Technological changes, for example, may in themselves enable and help bring about qualitative shifts in social production. These shifts not only accommodate population growth, but also establish new laws of population growth and new dynamics of development. The potentialities of each epoch change and new contradictions come into being. That "reality" nevertheless can easily lead to a deterministic-mechanistic view (see Boserup 1965; also Carneiro 1967; Harner 1970), if we do not take into consideration the whole spectrum of features involved in this process. There is no doubt that population growth has aided in precipitating many changes in the history of human society, but population dynamics change in each case and cannot be understood outside the particular set of social relations of production to which they are subject. To understand population growth, density, size etc., we need to know initially the inherent potentialities of the social system that facilitated, enabled or required these tendencies. For example, in human society, tools could mean increased manpower for production, changed land tenure or mobility patterns and different forms of organization: here the primary role of social production becomes clear, for social aspects of tool use are as important in the explanation of their appearance in social evolution as are their technological aspects. Because human societies can produce, they can accommodate population

growth. Population potential is a progressive result of the recognition of labour potential. By "progressive" we mean nothing arbitrary or dictionary-nominalist. Progress is increase in the social-reproductive powers of the society as a whole. Because that principle invariably employs a restricted definition of the term mode, the extent of potential development is restricted. The contradiction is defined by successful convergence upon the implicit limits of development defined by that mode. In certain societies such as agricultural or even feudal, the handful of technological as well as socio-organizational innovations on which the development of the population depends. seems extremely marginal by contrast with a short period of capitalist development. In prehistoric society again, development seems merely relatively absent; in that case, (in spite of the enormous literature devoted to it) such considerations tend to appear "preliminary", if not "preconceived".

Investigation requires correspondingly adjusted definition of scale to provide the fundamental features of the society. We must determine the intrinsic tendency for technological and related developments and locate the "boundaries" placed upon the realization of such developments by a given mode of social organization. It is in this perspective that it seems necessary and possible to reevaluate and reexamine palaeodemographic data and theory in general under another "non-traditional" approach.

2.4 Marxist approaches to population problems

The primary form of Marxism's traditional address to demography, dating back to Marx himself, has been through a sharp denunciation of its Malthusian version, as we have already mentioned earlier in this chapter. How did it come about that the Malthusian theory was able to exercise this enormous influence? One of the main reasons was that the actual phenomenon which Malthus described and which he tried to account for - the widespread poverty and pauperism among the working people - was a real phenomenon which could not be ignored and which was crying out for an explanation. Malthus was "right in his way" said Engels

"in asserting that there are always more people on hand that can be maintained from the available means of subsistence³³ although the pressure of population was really against the means of employment rather than against the means of subsistence. If Malthus had not taken such a one-sided view of the matter he could not have missed seeing that surplus population or labour power is always bound up with surplus wealth, surplus capital and surplus land property. Population is too great only when productive power in general is too great. The state of affairs in every over-populated country, in particular England, from the time when Malthus wrote onwards, demonstrates this quite unmistakably. These were the facts which Malthus ought to have examined in their entirety, and whose examination ought to have led to the correct conclusion; instead, he picked out one of these facts, neglecting the others, and thus arrived at his own conclusions."³⁴

Malthus's critics might attempt to prove his principle of population

to be wrong, but they could not "argue away the facts which led Malthus to his principle."³⁵ Thus, even apart from all the questions of what Marx called "party interest",³⁶ there was a presumption in favour of Malthus's explanation of the facts until a better one had been put forward. "Party interest", however, played an important role in securing the wide acceptance of the theory in ruling class circles. An explanation of human misery in terms of an "eternal law of nature" such as Malthus's principle of population, has an obvious appeal for that class, since it diverts attention from the part played in the creation of this misery by class exploitation in general and by particular systems of class exploitation such as capitalism.³⁷ One cannot do away with an "eternal law of nature". If it is nature and not human society which is responsible for a particular state of affairs, all one can do, at the very best, is to mitigate some of the effects of this "eternal law" and suffer the rest without complaint. Malthus "had other things in mind than a scientific treatise on population growth", says a modern commentator on the Essay,³⁸ and this is essentially one of the points where clarification was required. Marx and Engels felt that the most effective way of refuting Malthus's principle was to provide an alternative theory which could explain the facts of the modern world better than Malthus did. They were thus more concerned with the positive task of formulating the specific law of population peculiar to capitalism than with a detailed negative analysis of Malthus's theory.

The main proof of this demonstration is human labour. Population growth is a positive result of the recognition of labour potential. Independently of the rate of growth, "mankind is capable of increasing more rapidly than modern bourgeois society can stand."³⁹ The question

that must be asked is not only what factors inhibited population growth but also what factors did not, for they are of most significance from the point of view of evolution. This requires looking at some of the "inhibiting" factors, however, as some of the factors traditionally considered to inhibit population growth are in fact properly understood as social means for ultimately promoting progressive population increase. Without the emergence of a form of society whose immediate impulse is to universalize self-development, the possibility of measuring displacements along a "world-line" could not have occurred to man. Marx merely permits man to alter nature - and thus to "relocate" his existence. In that sense, Marx's approach contains two main elements useful for demography. First, it provides a basic mechanism of historical transformation through the changes in the mode of human social production and reproduction. Secondly it provides a model which brings the other human social activities - that is superstructure and the specific forms of social consciousness and behaviour - into relation with the economic structure of society and with each other. Thus, looking back upon previous development, it is impossible to evaluate the past without taking into consideration the present. (Fig. 6a, b) That is not such a defect as might be immediately supposed; it is impossible to understand the past from a less developed standpoint than that premised in capitalist development. The point is - under this understanding - not to impose capitalist teleology on the inner life of earlier forms of society. Such societies could not possibly "understand themselves", or be understood generally, except in respect of that movement within them which leads towards capitalism. This tendency, which must be inevitable and unavoidable in any attempt to understand the past from the present,

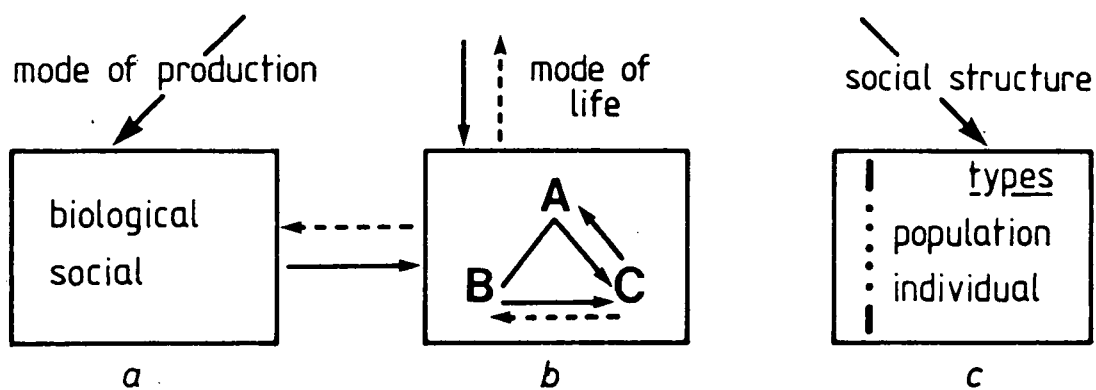


FIG 2.6 (a) Transformation of the mode of life as process based essentially on the dialectic link between the changes of the socio-economic formation conditions of life and population structure. (adapted from different sources)

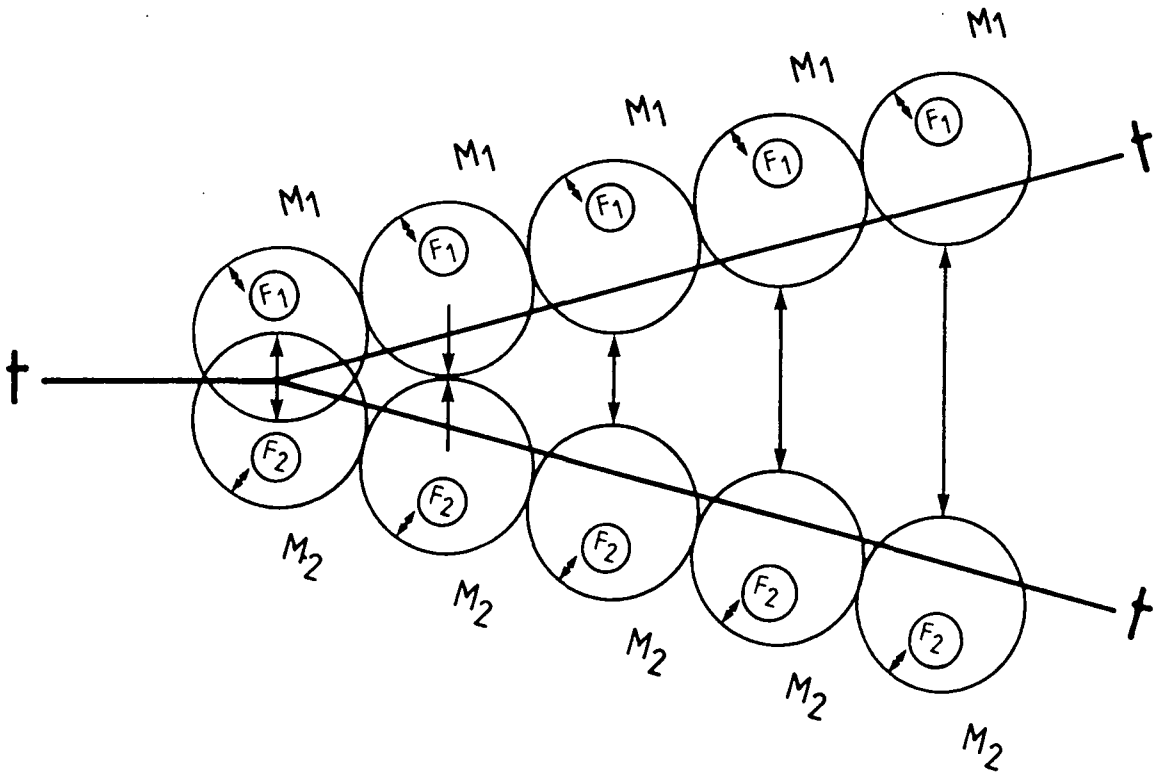


FIG 2.6 (b) To express the historical movement of compared components, the fundamental divergence as well as the appearance of specific new original qualities of the phenomenon in a comparative diachronic dimension assumes the development of a historical model with external-internal factors influencing a society. The above diagram is an example, (adapted from different sources) where M1, M2 = external factors, F1, F2 = internal factors and t = time.

becomes an error only when capitalism is "mistaken" for complete perfection. This error would cause one to look at prehistoric or ancient societies, for example, for their specifically capitalist "qualities". The only remedy for this is to examine the past from the standpoint of the fundamental contradictions of capitalist development, and to locate in the invariant features of historical development thus adduced the principle which must be applied.

However, Marx's approach also contains a third element; the relations between conscious human action and historical changes which are independent of men's will. Marx was at this point primarily concerned to establish the "independence" of long-term historical development in general from human consciousness and acts of human will. Marx was, in his general analysis, abstracted from individual cases and specific societies. This is a point that Marxists later elaborated at length: the coexistence of different human societies or socio-political and economic units of differing structures, or at different stages of development, but which interact.

Lenin called this condition the "law of uneven development".⁴⁰ The differentiation of the capitalist world into "developed and underdeveloped" countries cannot be regarded as a secondary aspect in history, even in history considered in its most general form. On the other hand, Marx did imply that this aspect exists, because he was aware that historical development was not linear. His model was to explain why some kinds of society develop more readily than others and why some (as in the prehistoric or Asiatic mode of production) tended to stability and resistance to development; or otherwise societies tending towards equilibrium of various kinds and societies tending to destabilize

themselves and in so doing to change (stability, as we have already explained is not to be confused with a static, immobile form of society; it means simply that change occurs, in a different, less marked way).

The historical specificity requires an empirical practice in understanding the past and has two aspects. On one side, to the extent that the empirical knowledge of the past is necessarily limited in several aspects, the primary requirement is to approach such studies with a profound sense of historical specificity. This means: less attention to the empirical evidence in its own right than reflection upon special thought processes; to adopt a search for the specific ideologies of other societies in respect of the objective basis of such ideologies within the peculiarities of the sort of technology of social reproduction; acceptance of the limitations imposed upon the scope of man's problem-solving actions by that technology and by the social forms and institutions through which action is made feasible and permitted in those societies. Then, with that understanding, to work the inner dynamics of those societies and explain their transformation, interaction and growth.

To understand any society, one must determine not only what kind of society it has emerged to supersede, but what contradictions in the previous mode of existence made the superseder possible and necessary. Marx's approach is to locate the transformations in "objective" technology, in objective economic laws which most fundamentally distinguish one basic mode of production from the other. Insights such as this and moreover the observation that there is no general law of population applicable to all historic epochs⁴¹ have stimulated interest in population studies among Marxists, and a rising concern with reproduction

growth or decline, and constitutes a material and social relation which, along with environment, technology, social organization and so on, sets problems for human groups and demands their transformation.

A Marxist demographic theory represents a political-economic perspective that operates at the level of the mode of production, not at the level of individual family dynamics. The meaning of all this is simple: demographic information and explanation cannot be reduced only to the estimation of biological reproduction. Demography might be defined as the discipline which deals with that which is never "equal" and cannot be supposed to be "equal", requiring not merely calculations of general change but explanation of the specific outcomes of that change. At the level at which particular events or decision affect situations, the level of the "history of events" may not be open to detailed general explanations at all - though generalizations will still establish the limits within which such events can exercise an effect. For example, how can one estimate effective demographic forces in slave societies? Demographic growth rests not on a natural increase but on the means devoted to the capture of foreign individuals. This permits a demographic manipulation of society, modification of birth rate, death rate, density and distribution. Demographic variables "change" under concrete material conditions, that is, exploitation, control over the production, which means control over the population growth in general.

It seems difficult to accept the positivist view that the scientist observes a reality existing outside himself or herself. There is indeed a very large number of ways of looking at the "reality", and there is immense room for "manoeuvre" in the way that demographic patterns are worked. What we mean is that it is not enough to be satisfied with

stating that we have alternative population patterns, since one does not even know if these patterns are responses to the same problems.

Concrete analysis needs to be evaluated on a level to prove the existence - or non-existence - of a problem, a situation and the result of it. Reproductive planning for social production is not the same as controlling population for resource management, it is in fact quite the opposite; the former is quality control, having little to do with numbers at all, for by resulting in maximally productive numbers population can in fact increase slowly (or stabilize), helping to bring about development in a society. As Marx observes:

".. in different modes of social production there are different laws of the increase of population and overpopulation; the latter identical with pauperism. These different laws can simply be reduced to the different modes of relating to the conditions of production, or, in respect to the living individual, the conditions of his reproduction as a member of a society, since he labours and appropriates only in society. The dissolution of these relations in regard to the single individual, or to part of the population, places them outside the reproductive conditions of this specific basis, and hence posits them as overpopulation, what may be overpopulation in one stage of social production may not be so in another and their effects may be different..... Thus overpopulation among hunting peoples was different from that of the Athenians, in turn different among the latter form than among the Germanic tribes - then so does the absolute rate of population increase, and hence the rate of overpopulation and population. The amount of population posited on

the basis of a specific production is thus just as determinate as the adequate population. Overpopulation and population, taken together, are the population which a specific production basis can create. The extent to which it goes beyond its barrier is given by the barrier itself, or rather by the same base which posits the barrier."⁴²

In palaeodemography, especially, difficulties arise when one proceeds to bring "evidence" for such considerations. Non-Marxist investigators usually "avoid" the problem simply by not stating it, or focusing their attention on rates of growth, size, distributions etc.

If one wishes to avoid certain answers, it usually suffices to avoid certain questions. It is true that one cannot instantly derive theories from a handful of facts about history. There are limitations - not only deriving from the information we have concerning the past in the quantitative sense, but also in the qualitative one. It is not always that we lack a sufficient quantity of facts for apprehension but that the judgement guiding the collection of the facts (whether by contemporaries of the period in question or by modern investigators) has ordinarily been hopelessly misguided, or nearly so. We do not have the right facts properly adduced and conceptualized. Yet it is important to try to delve beyond the difficulties and attempt to establish whether meaningful patterns of similarity or change occur in specific areas, where material is available. Many processes of palaeolithic societies do not leave any "direct" evidence. Since they participate in a system of exchanges of energy, matter and information, it is likely that this can be discernible in the archaeological record, to some extent. Material culture, particularly stone tools, is the "lifeline" of pre-

historic hunter-gatherers. Ethnographers and archaeologists have not paid much attention to the articulation of stone tools with different forms of socio-economic behaviour; they have traditionally focused almost exclusively on the time-space-form dynamics of these stone artifacts. This has excluded from consideration all tools - the vast majority - that do not fall into recurrent patterns of shape associated with a particular function.⁴³ The residual category of debitage, debris, or waste, usually comprising a vast percentage of all artifactual material, is only taken as evidence for tool-production technology. But since much of this material can be used for the same activities as the one which the archaeologist usually focuses upon, we have different assumptions and reconstructions of hunter-gatherer relations, based on biased samples. A reanalysis of those traditionally dichotomized assemblages and a reevaluation under another approach may provide us with unexpected results. Why, for example, do hunter-gatherers, however predictably, produce a number of highly labour-intensive items?

Why do we find such complex production steps and such careful choice of raw materials? Why invest time in the process of production if there is no extractive advantage in a finished tool? Is this not a violation of the minimal effort and least-cost assumptions associated with some recent models? Which realms of cultural behaviour and economic structure influence the choice between the least-cost alternative (a random flake that is suitable for the same tasks) and the more "expensive" finished tool?

There are a number of questions which, when posed, may allow artifacts to fall within another level of communication, context and purpose. It is, for example, entirely possible that the degree of tool

elaboration correlates with the social and economic context in which a given activity is carried out. Tool use then, can be seen not only to make possible increased production, but also to be enabled by productive requirements, and comes into use when the social relations of production demanded them and could utilize them effectively. Any discussion of the role of tools should consider just what it was that tools did socially, and how labour potential was realized in them as embodied labour. Even if an adequate elaboration of these concepts (or a satisfying description of these activities) is not yet possible, it is hard to imagine that perceptions of population evolution must remain - consciously - within the limits of a single question - and a single set of answers.

Palaeodemography is concerned not with societies which can be defined in the abstract, or in general terms, but with societies which are the products of their past. Complex interactions operate constantly with historically given "components" adapted maybe to functions for which they may not have originally been designed. Even the forms of development which can be presented in a linear form, such as the secular growth of population, require to be explained by a mechanism of complex social change, since they are not directly controlled by any simple Malthusian relationship.⁴⁴

Moreover, situations which could be explained in Malthusian terms such as the population crises in the 14th and 15th centuries in Europe, or in 19th century Ireland, or to-day (no longer crisis but a constant phenomenon of world-wide dispersed famine from Ethiopia to India and the malnutrition or undernutrition of South American countries) became Malthusian because of specific external and local

contradictions between social relations and forces of production on the one hand, and uneven allocation of labour and industry on the other; to these it would be much more appropriate to add exploitation, under a certain mode of production, ²capitalism, without which the curves of demographic growth, decline, density, migration, fertility, mortality and the rest, cannot be explained as there is nothing "natural" or "inherent" in their "tendencies" except perhaps in the explanations of the theorists who constructed them.

2.5 Summary

As previously stated an attempt was made to distinguish the various meanings of terms such as population growth, size, density, mortality, fertility, related to the concept of demography and inherited in palaeodemographic research, and the different problems that can arise under a monocausal evaluation and explanation of the factors that produce them. Also to look more closely at the dynamics of human reproduction, to relate them to prehistoric societies and distinguish the possible effects on the demographic patterns and to what extent these demographic patterns are interrelated into the whole system and affected (or vice-versa) by it.

A Marxist approach takes into account the type of contradictory relations which certain phenomena and their organisational mechanism have with the basic means of production, the type of relations in which they are articulated with the rest of the structure, and compares them with their equivalents at other levels; for example, the level of economic activity, characterised by a relative self-sufficiency under

certain circumstances, that is, by production for the producer's own consumption; hence in a small quantity and without conditions for generating surpluses; and how the appearance of the latter under capitalist development, can have serious implications on certain sectors of population independently of their rate of growth. From the point of view elaborated here, the concept of population growth and other demographic variables is strongly connected with a special socio-economic formation and with the causes which contributed to their appearance.

Historically, population was the first object of statistical accounting and demographic phenomena, the field in which statistics was developed as the quantitative method of studying these phenomena. Statistics, which Lenin called one of the most powerful tools of social knowledge, makes it possible to measure connections and variations within a structure, but tell us nothing about the character of the cause-and-effect relations. Recognition of these methods in general in demographic work still does not mean that they can operate automatically. It has been the argument throughout that capitalist expansion, colonization and neo-colonization brought disruption and devastation to peoples and cultures of different areas, and it is necessary to point this out, not for ethical and political reasons, but also for scientific reasons. For it is in this light, for example, that demographic expansion (or population growth), which is the logical means to face the social security requirement, comes as a response to the colonial pressure.

Marxist studies on pre-capitalist formations need considerable development, to collect the type of information which cannot be found in an ideologically biased anthropology,⁴⁵ archaeology and consequently palaeodemography; they need to undertake research on such fields as

the relations of production, the process of reproduction, the social organization of labour and the changes undergone by these formations through their own development or through contacts with other economic systems. For this purpose palaeodemography must use history and make better use of the available material.

Notes and References

- 1 With the exception of the Soviet historical demographical tradition and, later on, the re-evaluation of population studies from the French Marxist and neo-Marxist school. From a Marxist standpoint neither of the "variables" is what it seems nor are they capable of varying in the way postulated by a "pure" statistical analysis. Population size depends upon family life and upon the work habits of the society. It is interwoven with the most basic strands of social life and cannot possibly be considered autonomous. The important fact is that the size and rate of growth of population should not be considered exogenous; population pressure does not impinge on a society, it is created by the society. That is, random events are not considered, unless it can be shown how these "accidents" become necessary in social process. Since these can never be "accounted for" in processual theory, social scientists can at best know enough of social dynamics to know what alternatives will not take place should an external random event be introduced. "... external causes are the conditions of change and internal causes are the basis of change...external causes become operative through internal causes." (Mao-Tse-Tung 1970)
- 2 Malthus T.R.: an Essay on the Principle of population.
- 3 Just as it bothers contemporary population growth alarmists. (Erich 1968, Huxley 1956, Osborn 1958, 1960, Taylor 1970)
- 4 Marx:

Capital Vol. I., Grundrisse,

Engels: The Origin of the Family, Private Property and the State.

5 Capital loc.cit.

6 China over the past twenty years furnishes a good example. The population growth rate of pre-revolutionary China resembled that of many parts of the world underdeveloped as a consequence of capitalism yet firmly locked into a dependency relation with capitalist powers through imperialism. But following the sequence of revolutions in China (1949, 1966) and the firm establishment of producer control, China has at present brought its population growth rate to the low level of that of the developed capitalist countries. Producer control eliminates the accrual of surplus labour value by an exploiting class. Planning is possible, and production for exchange no longer a necessary motive factor, as production for use is self-correcting, (and vast reservoirs of reserve labour are not necessary to drive wages down).

Faris J.-1979.

7 Petersen W. 1967.

8 Petersen W. 1975.

9 Such a "fact" though is not at all absolute. Malnutrition, for example, can alter this mechanism. Except in severe conditions, malnutrition (of "females" in their fertile years does not generally lead to a decline in conceptions, but it does lead to fewer pregnancies, to a shortening of the female reproductive period, increased vulnerability to diseases and accordingly increases death rates (Leatham 1958, Katz 1972, Keys 1950, Hans-Harrison 1977, Scrimshaw 1976).

It is evident that the problem of how a population is linked to the productive system has to be considered; both the social relations of production and the productive forces (in the expanded

definition) enter into the fertility equation here, and must be identified in each case. This implies that the fertility dynamics cannot be read as a single configuration of biological/physiological forces, but rather should be conceived as a variable within a set of conditions (mainly socio-economic factors of production and reproduction).

- 10 The principle of historical specificity as applied to population dynamics entails also a rejection of any demographic study which abstracts rates of fertility and mortality from the specific social structure of the community which is being studied. As Marx writes in the *Gründrisse*: "Population is an abstraction if we leave out, for example, the classes of which it is composed.... Population in abstraction is a chaotic conception of the whole." Lenin subsequently took up this polemic in "What the Friends of the People are....". It remains a perfectly valid point and a telling indictment of a great deal of contemporary demography, which is still involved in just such abstractions despite a growing awareness within the field of the problematic nature of macro-aggregation devoid of detailed historical and structural specification.
- 11 Demographers have long argued whether declining mortality or rising fertility was the driving force for the growth of Western Europe. In a century and half the population of Europe more than trebled, arriving at 400 millions by 1900 despite the exodus of some 40 million people - the largest intercontinental migration in history. In recent years the prevailing view has strongly favoured declining mortality as the prime factor, with the centre of controversy shifting to an explanation of this fall. (S.C

improvement in medicine, climate or living standards and nutrition). Swept up in the dynamic of polarized debates, most have argued for the unilateral role of one factor, while minimizing or denying the contribution of the other.

12 Bogue D. 1969.

13 Hauser and Duncan 1959.

Perhaps the most significant factor in re-evaluating these disciplinary traditions has been an increasing amount of data on non-western populations. Demographic studies by anthropologists and biologists on these older societal forms have revealed patterns which cannot be adequately explained by the traditional approaches. There are several problems and issues, all involving the use of demographic theory for making anthropological inference. The anthropologist's understanding must, however, be basically different from that of demographers, a point that sometimes fails to be seen, like Petersen 1975, or Bocquet-Masset 1982). Anthropologists can aspire to less mathematical accuracy, and must instead be concerned with questions of a more coherent scope than the study of national political statistics, seeking an understanding of population processes through social relations of production and relevant aspects which are reflected in demographic variables.

14 As Marx says: "... these different laws can simply be reduced to the different modes of relating the conditions of production, or, in respect of the living individual, the conditions of his reproduction as a member of society, since he labours and appropriates only in society. The dissolution of these relations in regard to the single individual, or to part of the population,

places them outside the reproductive conditions of this specific basis, and hence posits them as overpopulation, and not only lacking in means but incapable of appropriating the necessaries through labour...". "...Thus, what may be overpopulation at one stage of social production may not be so in another, and their effects may be different." (Gründrisse - Notebook VI)

(This point is elaborated in subsequent sections of this text).

- 15 There is obviously some poverty and distress which cannot be associated, even by the most extreme of the neo-Malthusians, with any "pressure of population against the means of subsistence." The working people of capitalist countries have not, in general, begun to find themselves conspicuously redundant in relation to the existing means of subsistence. Indeed it is the bogey of under-population, rather than that of over-population, which is generally raised up before them nowadays. But they have periodically found themselves redundant in relation to the existing means of employment. Malthus himself once wrote that "the difficulty of procuring the means of subsistence" is occasioned "partly by the necessary state of the soil, and partly by a premature check to the demand for produce and labour. In the great majority of cases it is this "premature check" which is the really important phenomenon. Under capitalism, the Malthusian pressure of population against the means of subsistence is largely a myth, whereas the periodical pressure of working people against the means of employment is a grim reality. "Malthus' theory.....is significant X in two respects: 1) because he gives brutal expression to the brutal viewpoint of capital; 2) because he asserted the fact of

overpopulation in all forms of society. His conception is altogether false and childish because he regards overpopulation as being of the same kind in all the different historic phases of economic development; does not understand their specific difference and hence ... reduces these very complicated and varying relations to a single relation, two equations, in which the natural reproduction of humanity appears on the one side, and the natural reproduction of edible plants (or means of subsistence) on the other, as two natural series, the former geometric and the latter arithmetic in progression. In this way he transforms the historically distinct relations into an abstract numerical relation.....which rests neither on natural nor on historical laws." (Marx, Gründrisse Notebook VI.)

Indeed, we are told from the neo-Malthusians "that there is no hope at all for India (one of the customary text-book examples of an "overpopulated" country) - any increase in food production would soon be followed by a corresponding increase in India's "teeming millions"; if one suggests that two centuries of British rule in India may have had something to do with the present situation, and that experience in the West does not seem to bear out the theory that a rise in the standard of living necessarily causes a corresponding rise in birth-rate, the neo-Malthusians will reply to the effect that the law of population is an eternal law, a natural law and therefore cannot possibly be abrogated. (Marx on Malthus, introd. by R.L.Meek. 1953)

(See also Doomsday Book by G. Taylor 1970 and Vogt W. 1949, Road to Survival). Others use Malthus's doctrine in order to reveal

a "dilemma of science". The application of scientific methods to combat diseases, to improve rural and industrial health and to increase the supply of medical equipment and services, must necessarily increase the pressure of population upon the world's food resources! "Had it been possible to foresee the enormous success of this application, would humane people have agreed that it could better have been held back, to keep in step with other parallel progress, so that development could be planned and orderly? Some might say yes, taking the purely biological view that if men will breed like rabbits they must be allowed to die like rabbits, until gradually improving education and the demand for a higher standard of life teach them better. Most people would still say no. But suppose it were certain now that the pressure of increasing population, uncontrolled by disease, would lead not only to widespread exhaustion of the soil and of other capital resources but also to continuing and increasing international tension and disorder, making it hard for civilization itself to survive: Would the majority of humane and reasonable people then change their minds? If ethical principles deny our right to do evil in order that good may come, are we justified in doing good when the foreseeable consequence is evil?..." (Professor A.V. Hill, Presidential address to the British Association, 1952)

No further comments are needed on the above.

Indeed, under "tension and disorder" it is "hard for civilization to survive". South African Black people, and Latin American populations have something to say on that ..

- 16 Natural fertility was first defined by the French demographer L. Henry 1961 as the absence of deliberate birth control and family size limitation. The term is now in widespread use among demographers, although not without ambiguities. A population is held to be in condition of natural fertility when birth patterns show no evidence of being parity-dependent. That is, if the fertility curve of a given cohort of women corresponds broadly to their natural fecundity curve, (even though in their late thirties and forties) a regime of natural fertility is held to prevail. Customs and practices, which affect birth-spacing, and hence fertility rates, but which are not parity dependent, do not contravene a regime of natural fertility. The natural/controlled dichotomy tends to generate a bipolar model: preindustrial peoples have natural and high fertility while industrialized populations exhibit controlled birth patterns and register low fertility rates. The nature of this dichotomy, so congenial to the modernization framework, is now ritually acknowledged by demographers although it is recognized that there are tremendous variations within each.
- 17 See AAAS 1974, report by the Advisory Committee on Cultural Factors in Population Progress.
- 18 Anthropologists conclude that the availability of resources seems to determine population size and characteristics which appear to be better than a priori high fertility and mortality rates, but which, as we shall see (section 2.3) in almost all cases, more than often, has led to environmental and biological determinism.
- 19 Cook S.F. 1945

20 Cowgill D.O. 1970.

The transition theory has been formulated by W.S. Thompson and later reformulated by F.W. Notestein 1945, and has been criticised both for sparseness of historic data and lack of utility for prediction of future events. See amongst others, Petersen 1960, Davis J. 1950, Taeuber I. 1952, and even Thompson 1959.

21 Literature on the subject is much too extensive to be summarized here. The majority of it is included in the bibliography.

Boserup 1965, has utilized this approach to account for agricultural development, while Friedlander, 1967 and others have noted that there also may be demographic effects such as fertility decline or migration. Problems with the question in this form are that it is hard to measure population pressure independently of the response it is supposed to produce and/or the causes of its appearance in a given economic and political structure.

22 Faris J. 1979, Leacock E. 1979.

23 The issue has been already discussed in Chapter I - although in another context - and there is no need to enter here into the debates and controversy related to it.

But see: Monod J. 1972, Frolov I.T. 1978.

24 Weiss M.K. 1973, 1976, Roberts D.F. - Mohan M. 1976,
Eglin J. - Thery H. 1982: Le pillage de l'Amazonie.

25 See Cook S.H. 1972, Godelier M. 1974, Hassan F.A. 1973, 1978, 1980.
Meillassoux C. 1980, Swedlund A. - Armelagos G. 1976, Swedlund A.
1978, Welinder S. 1979.

It is characteristic that in a "classic" inventory and appraisal

of the study of population, Hauser and Duncan (1959) make a distinction between demographic analysis and population studies. The latter, according to them, are concerned not only with population variables but also with relationships between population changes and other variables - social, economic, political, biological, genetic, geographical. The point is however that such a distinction does not exist: demography is dealing not with any abstract notion but with real people.

26 Bocquet J.P. - Masset C. 1982.

27 It is a truism to rely only on skeletal finds for the estimation (even relatively) of population indices. Even if an excavation is complete (in the case of palaeodemography) it is not possible to conclude that all the inhabitants who died were buried at the living site, or in a designated cemetery, in such a way that their skeletons could thereafter be removed and identified. Two major sources of loss are adults killed at a distance and infants or young children whose bones disintegrated rapidly or who were not buried at all. Even more difficult is to determine duration; and how do we deal with open as opposed to closed systems?

See Cook, Hassan *ibid* and, Angel J.L. 1969, 1969 a,b, 1971, 1972.

In most discussions of modern population, the analysis passes over the most basic question: what entity is being measured? The persons living in a particular juridicially bounded area, typically a national state, or one of its subdivisions, ordinarily constitute a "population", though this fact does not specify the concept.

Archaeologists can seldom delimit a population by a legal definition.

As they often use the word implicit it means those concerning any other demographic process. Lee, seems to be suggesting something of this kind when he proposes that "instead of postulating a mean group of 25, or 50 or 100 for prehistoric population, it may be more analytically useful to think in temporal terms of the amount of members spent in groups of various sizesⁿ (also Birdsell 1972). The span represented in a single dig can constitute centuries - if not millenia - during which much or nothing may have happened to the population that once lived there. The problem is typically solved by classifying whatever data the archaeologists, paleontologist or anthropologist has accumulated and then associating a population with each of the variables (Hill and Evans 1972) and Petersen W. 1975.

- 28 Ascadi-Nemeskeri 1970, Masset C. 1971, 1973, Howell N. 1976, Weiss K.M. 1973, 1976.
- 29 Amongst others: Gladwin-Korniets-Soffer 1984, Gilman A. 1984, Okladnikov A.P. - Pospelova C.A. 1982, Pershits A.I. 1980.
- 30 Cowgill C.L. 1975 a, b.
- 31 Ilyenkov E.V. 1982.

- 32 There is no need to restate a well-known problem here. Except for the Marxists, the main opposition and analysis to a functionalist approach stem from the French neo-marxists and structuralists. A thorough, critical approach on the subject is provided by Abeles M. 1976.
- 33 Engels F.: The condition, of the working class in England (1844-5).
- 34 Engels F.: The myth of overpopulation (1844).
- 35 Ibid.
- 36 Marx: Capital Vol. I.
- 37 ibid.
- 38 Smith K. 1951. The Malthusian controversy.
- 39 Engels F. Letter to Lange 1865. The pressure of population upon the means of employment.
- 40 Lenin, from his earliest works, (see Lenin: bibliography) paid attention to population problems. By analysing changes in social structure during the development of society, he demonstrated (in addition to developing new approaches for an understanding of the social structure of the population of pre-revolutionary Russia) the basic population problems of each of the socio-economic formations, and the effect of the relations of production on a population differentiated by classes and social groups. He analysed the role of population movement, (including various forms of migration), and the evolution of settlements as the productive forces and relations of production develop in relation to the patterns of the new distribution of population in a socialist society.
- The point here is not to say that Lenin was a "demographer", but that population matters are an integral part of the Marxist

tradition, defining the place of population in social development and material production and studying the nature of the laws of population, not as eternal, natural categories; by population we should understand the aggregate of the people carrying on their life activity within a certain society. Changes in the structure of a population suggests the mutual influence of social and economic conditions. The size of a population influences, in certain cases, social development, but the size, density, growth etc. of a population do not determine the character of the social system nor are they the decisive factors in socio-economic development. When bourgeois sociologists and demographers attribute decisive significance to population growth they assert that unavoidable, universal, natural conditions exist, to which every society has to comply (with the exception of the ruling classes in each society). We will discuss later, in chapter four, "demography and economy", how such an ideological choice had serious implications (in theory and practice) for the explanation of different economic formations and how societies at different stages of evolution are treated as being basically identical.

41 Marx K.: Capital Vol. I,

42 Marx K. Grundrisse Notebook VI (the concept of the free labourer contains the pauper. Population and overpopulation etc.)

- 43 Differences between technology as a theoretical discipline and techniques as a practice procedure are discussed in chapter six. Nevertheless, as already mentioned (ref. 61, chapter I) tools, technology, are usually referred to by Marx as "industry" and this is the meaning used here. A point of attention concerning material remains (tools, pottery, residential structures or whatever) and a particular population is that the first can change over time and space with no change in the other; and that the first remains the same over time or space does not mean a necessary constancy in the second (see chapter six).
- 44 Marx K.: Pre-capitalist Socio-economic formations, Grundrisse
 Marx K. - Engels F.: The German Ideology.
 Engels F.: Dialectics of Nature, The Origin of the Family....
 Letter to Lavrov (12 Nov. 1875), Letter to J. Bloch
 (September 21 1980).
- 45 Bromley YU.I. 1979, Faris J.C. 1979, Meillassoux C. 1980.

CHAPTER 3

Demography and Settlement

3.1 Space and Spatial Demography

It is often convenient to ignore the manner in which man is organized within an environment which is spatially and temporally distributed. This has been the approach to many analyses of physico-ecological and socio-economic systems and has been the approach in many demographic studies. The most complete set of statistical data, and the most widely accepted definitions take no account of the spatio-temporal relation and the fact that what distinguishes this relationship is not only its size (that is a criterion of statistical delimitation) but the "diffusion" in space of a range of activities, functions and groups, and their interdependence as a result of a social dynamic of geographical interconnections.

Space is a material product, in relation to other material elements, among others, men, who themselves enter into particular social relations, which give to space (and to other elements of the system) a form, a function, a social significance. It is not, therefore, a mere expression of a total structure, but a concrete element of each historical ensemble in which a society is specified. It is a matter of establishing, in the same way as for any other real object, the essential laws that govern its existence and transformation, and the specificity of its articulation with the other properties of a historical reality. This means that there is no possible explanation in demography which can "survive" outside a spatial consideration.

Given the immediate impact of this perspective, the problem of the relation to space is a terrain directly connected to demographic research, for society is understood, above all, as a community, this community being defined as a system of relations between differentiated parts, localized, to an extent, territorially.

Demographic organization is then explained by an ensemble of processes which shape, distribute and relate ecological units, namely, any spatial expression that presents a certain specificity in relation to its immediate environment. This is a new dimension which displaces the opposition between demographic factors and natural factors.¹ For in the deterministic problematic, in the strict sense, one does not include the dynamic aspect of the appropriation of space in terms of social activity. This displacement - although important - remains however "formal", insofar as the processes which explain the spatio-demographic structure (or structures) observed, are not themselves explained by reference to a fundamental element, that is, the economic organization of the society. In fact, the problematic proper to any theory of space does not consist in opposing values to natural factors, but in discovering the laws and the composition of historically given situations, on the assumption that people's actions may be partially related to their perception of space and the differential evaluations they place upon various parts of it.

Concepts of space vary from one cultural context to another, and with broad cultural configurations smaller groups may develop a particular conceptual apparatus with respect to space. This conceptual framework which a society develops to represent space is not static. Societies learn insofar as they are affected and reshaped by inter-

action with environments. That learning involves activity and behaviour; although the two notions cannot be described under the same term, they involve a basic identity; they both consist of acts; and acts have meaning; and meaning is engendered and maintained exclusively within and by some system of communication. Human beings, and accordingly societies, can learn activities and they can learn behaviour. This is why not "environment" but dialectic interaction with environment is decisive for them.

Concepts of space are founded on experience. In its most elementary form this experience is entirely visual and tactile. But there is a transition from such primary experience of space to the development of intuitive spatial concepts, and ultimately, to the formalization of such spatial concepts in terms of some geometric language.² In the process of this transition, primary sensory experience, myth and image, cultural form and scientific concepts, interact. At the representational level, the emergence of spatial concepts is bound up with the structure of the culture in which such concepts are being developed. (Fig. 1) Most writers agree that the actual physical space which people experience and perceive is not measurably different from being Euclidean in structure. Piaget (1956), however, draws attention to the perceptions of space and the representation of space by means of imaginary concepts. At the first level, he suggests children discover spatial concepts in the same order - that is, progressing from topological concepts to Euclidean concepts - but at a somewhat later age. The ability to represent space schematically is undoubtedly influenced by the existence of signs and symbols designed to represent that space. It is influenced, therefore, by

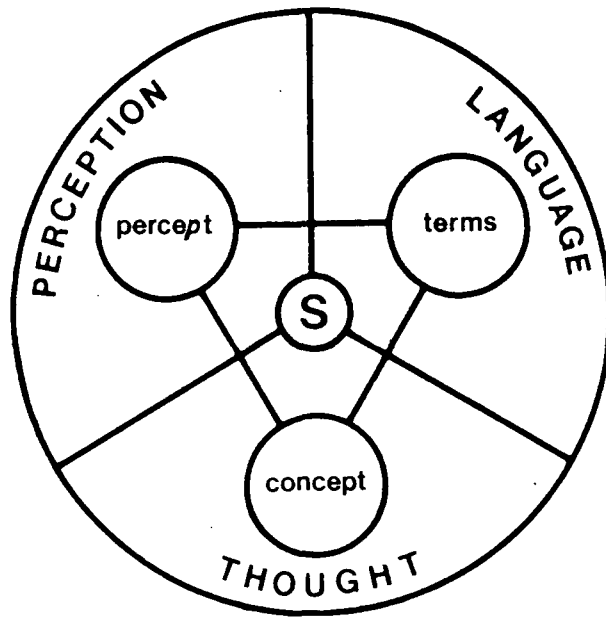


FIG 3.1: a diagrammatic representation of the relationships between percepts, concepts and terms (after Gaws, 1965)

culture. Howard and Templeton (1966) similarly suggest that it is dangerous to draw conclusions about the ability to move and act spatially from information regarding the ability to give schematised representation of this space. Moreover, the representation of space "involves the evocation of objects in their absence" (Piaget 1956). It involves relating concepts which have no empirical content with real situations.³ In primitive societies it often seems that spatial concepts are rooted in the language developed to describe "concrete and personal situations." (Fig.2) Primitive spatial orientation, though very much keener and more precise than that of more technologically advanced societies, moves wholly in the channels of concrete spatial feeling. Every point in their surroundings is exactly known to them, but to hold that knowledge in a spatial schema means a transition from mere "action" to an "empty space"; that kind of representation needs another "spatial consciousness". This simply means that spatial concepts may be represented by different, but appropriate, formally developed configurations (geometrical or non-geometrical in the strict sense). This is why the cultural heritage "limits or promotes the manner in which, and the terms in which, individuals deal with the spatial attributes of the world around them. If a culture does not provide the terms and concepts, spatial attributes cannot even be talked about with precision."⁴ Without such instruments in the cultural heritage certain areas of action are excluded and the solution of many practical problems impossible.⁵

The external environment is recognized in a number of different ways and meaning is attached to it from a number of different points of view. Characteristics of the environment, its aesthetic appeal or

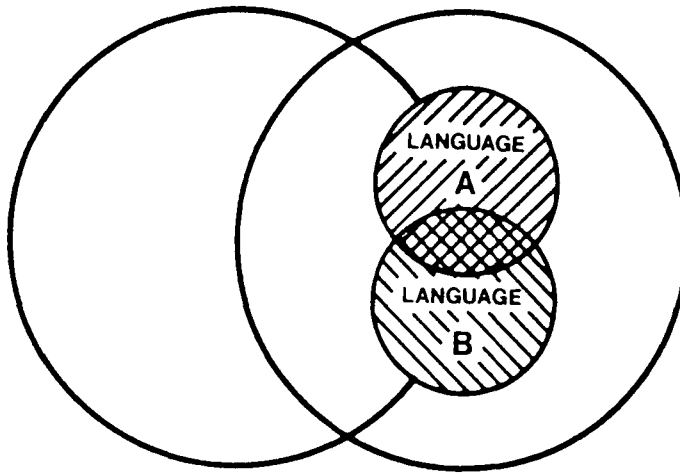


FIG 3.2 : a diagram to show how two rather different languages may be developed within the same context of perceptual experience and conceptual development (and/or within the same "space") The language has only a small area of overlap and hence only a few terms can be translated from one language to the other (after Lenneberg 196?)

its historical significance, its value and its meaning to each observer, all enter into the formation of environment that a society structures over time. This structure is not necessarily something that is already there, but is something that appears to be there within the limits of awareness of a culture. To exist in and to comprehend an environment, people learn to select and organize critical subsets from the mass of experiences and the sensing, storing and organization of bits of information for the "ultimate" use of coping with the tasks of living, is the process of knowledge of everyday life. Issues that arise from this schema, include examining the relationships that exist between commonly defined structures (such as "village", "town", "city") and people's images of them, and solving problems of obtaining information and representing it so that degrees of similarity or uniqueness of the information can be recovered. The concept of "area" is related to that "point-line" information, each time, serving to describe a more general spatial property of the major components of a spatial representation of phenomena. Accordingly a number of critical environmental cues are "imaged" as being located at specific places in the environment. Connections are established between the places, some in the form of remembered (physical) paths that can be followed on a trip and some less spatially obvious, such as would be the case with functional links between places. In the vicinity of known places, there is a spread effect of information, and small-scale concepts of "area" (such as neighbourhood, vicinity, interaction between groups) are incorporated into the basic node-path image. A coalescence of such adjacent areas defines the concept group, band, community; a grouping of these defines the geographical area.

concept of "region"; in practice, however, it is inevitably difficult to isolate common characteristics from differential ones, and problems are further exacerbated when different characteristics are common to various subsets of properties considered.

All such patterns have one common unifying property; their "raison d'etre". They all have their origins in processes which involve the sub-division of a finite space. But concrete examples of what these characteristics or elements signify in relation to space are extremely "dangerous" and have no more than an indicative value, for there is no congruence between a theoretical element and an empirical reality, which always contains everything at once. For example, "settlement" is economic, political and ideological, although its essential contribution is placed on the level of the reproduction of labour power. In addition, one must recognize that common elements are not common to all alternatives. Any common attribute is not constant over all opportunities, and indeed could not be in a realistic spatial pattern.

It can be argued that the articulation of a demographic system with space is organized around: a) two essential relations, regulation and integration (and the places thus determined). The spatial expression of this system is, on the one hand, the segmentation of space (as bands, communes etc.); on the other, it is action on the economic organization of space through regulation that the institutions within a culture exert on the elements of the economic system, including the spatial translation; and b) two major groups of "measurement": geometric and non-geometric. The former, which include size, shape etc., are common to all kinds of "material" objects. The latter vary

with the general sequence of events and phenomena which represent a non-absolute quality. The network of spatial expression, appropriation and properties of these characteristics illustrates a mutual interaction between the "form" and "function" of a demographic system which "organizes" space by marking it with an aggregation of signs, whose signifiers are made up of spatial forms and whose significant are "ideological" contents, the efficacy of which must be construed from their effects on the social structure as a whole.⁵

The selecting and ordering of spatial information can be found in several sources. The idealized apposition of man and nature espoused by Ritter, March and Richtofen remains the crucial ingredient. However, the "modern" concept of society and environment differs in more than words, by suggesting complex interaction - involving all components and several hierarchies. The surface of earth comprises the totality of geographical space. Such space includes physical, cultural and economic attributes and can be examined from both idiographic and nomothetic viewpoints. Each of the three thematic attributes has dominated the prevailing paradigm of a generation of geographers: the physical from Richtofen to Davis, the cultural from Schlüter to Sauer and the economic since the implementation of Christaller, and Loesch's spatial components within geographical research.⁶

At the very time that many geographers have turned their concern to concrete and pressing social questions, mathematical exuberance has reduced the human component to dot maps of artifacts or clusters of people. Considered in strictly numerical terms, artifactual aggregates or material attributes lose much - if not all - of their cultural or symbolic value. Many geographers, anthropologists and archaeologists

have tended to forget that people do not generally act as individuals but as members of a community. It is the community that collectively shapes attitudes or makes fundamental decisions,⁷ the result of which are the material components that most commonly lend themselves to successful computerization.⁸ Communities are the integral components of the pervasive but heterogeneous matrix that constitutes cultures. It would seem that many geographers have failed to appreciate that cultures also are idiosyncratic or particularistic, that the impact of culture on the landscape includes factors other than profit and loss, or distance decay, and that culture, by definition, is cumulative, historical and dialectical.

The evaluation of these concepts was the main factor of a geographical deconcentration from the traditional approaches, merely expressed at the level of locality and its replacement by a geographical space, sufficiently broad to include socio-economic perspectives and a chain of interrelations in an existing milieu of information and innovation.

To return to the point of what must be assumed about demographic considerations of space, the situation may seem to be so restrictive as to be severely "unrealistic". Meaningful evaluation in such studies has been hampered because existing research has been deficient in two important areas of population research. First, knowledge is lacking (or not considered when it is present) on the nature of the relationships which exist between the differential characteristics of a population. Secondly, there is a paucity of "independent measures" by which to evaluate systemic determinations of populations concerning the institutional and symbolic content of their operational space.

There is a number of different ways in which spatial knowledge is organized and used. Depending on technology, organization and subsistence modes, space provides a set of natural resources, perceived differently by hunter-gatherers, by agricultural communities or by industrialized societies, and therefore affecting their value and potential exploitation. The "object" population is then explained by the processes that shape, distribute and relate "ecological units" with its immediate (created) environment. The principal ecological processes are: centralization or the functional specialization of an activity or network of activities in the same space, with its articulation over the whole regional territory; centralization, with its corollary, decentralization, underlies the processes of mobility of a group's structure and, consequently, the functions of circulation, in the broad sense; segregation refers to the process by which the social content of space becomes homogeneous within a unit, sometimes strongly differentiated in relation to external units, in general according to distance; invasion-succession explains the movement by which a new population, or activity, takes place in a previously occupied space, having been either rejected by its previous sites, or integrated into it, or taking it over in a dominant role.⁹

There is nothing new in the above specifications let alone that they still cover a broad field of conflicting discussions, where the problematic is concentrated mainly at the environmental level, incorporating abstract inferences on populations, without differentiating between human and other species most of the time. It is true nevertheless that some ecologists insist that the whole of the organization of space should be treated on the basis of interaction

between members of the human species, the technology created by it, and the natural environment. This may have placed them in an extremely strong position, insofar as, in actual fact, these are the given elements of the problem. But because they did not try to theorize these relations and presented them quite simply as factors in the universal process of the struggle for life, they "covered" biology and lent itself easily to the socio-political critique, particularly at a time when a reorientation of values was becoming necessary.

Complex delimitations within space may attain different "forms", with space variously controlled by several hierarchical institutions (from kings and secular nobility, to chartered cities, companies or individual landholders), and according to different privileges (religious, military or juridical control). Particularly, but not specifically, in the case of sedentary societies, space, as an aggregate of human constructs and natural economic potentials, may become an object of military and political organization. The overall effect of a sufficiently complex overlay of socio-political controls is a spatial "system" determined less by available resources and their proximity and more by spatial fragmentation as imposed by socio-political boundaries and the resultant economic privileges. And this leads to a relocation of population and spatial patterning which has nothing to do with "purely" ecological or demographic factors.¹⁰

These different perspectives on the nature of demographical space suggest that another approach is needed, which would have considerable methodological and empirical utility. Demographers tend to think of populations as being represented on a permanent medium, using absolute

parameters, and do not consider the possibilities of the differentiation and composition of social space using the internal and external factors that establish, each time, their structure.

The methodology of a discipline is not determined by the practice of that discipline in isolation from the reality. A combination of regional symbolics and local symbolics together with a "territorial obsession" can lead to serious misinterpretations, which cannot and should not be ignored any longer. Philosophers of science have frequently been involved in direct debate with the practitioners of some disciplines as to the nature and form of explanation they pursue. To put it another way: what is the relationship between the methodological arguments as developed in demography and the methodological argument regarding knowledge in general? How far do the views of the methodologists of demography tally with the views of the philosophers of science and, if there are differences, what rational basis can be provided for such differences?¹¹ It has been suggested on occasion, that the work of philosophers bears little relationship to the conduct of empirical work, which is a very dangerous aspect of solving the problem of a discipline. In the west, particularly, there seems to be a tendency to "avoid" or "ignore" such a direct debate and a gap has thus developed between the methodologists and the philosophers of science. Surprisingly enough, even within archaeology, demography and anthropology the arguments have not been about explanatory forms but about objectives. Where and when explanatory forms have been considered there has usually been scant reference to the enormous literature on explanation in general, much less to the dialectics of explanation. This is scarcely mentioned, even in those sections where

the concern is obviously with dialectical forms rather than descriptive objectives.

In fact, although more recently, spatial concepts have been incorporated into cross-cultural studies it seems that a spatial theory under the above-mentioned component has not been justified or accepted; and most of the attempts made to apply this approach to prehistoric settlement patterns have remained at the level of a functional-ecological appropriation of space with no deeper insight.¹² This situation allowed the treatment of population demography as something "maintained" under the permanent order of topological relations and justified the existence of possible positions as independent of the existence of actual facts. In any event, not all contexts calling for the postulation of environmental influence would be contexts calling for the postulation of demographic effects. Something fundamental emerges from this: the social signification of the different forms and types of space, the significative segmentation of space, the spatio-demographic units, do not have meaning outside the organization of the social structure; therefore in terms of the mode of production and the social formations. That is to say, each mode of production and each stage in the mode of production implies another diversification of space, not only in theoretical terms, but also in terms of the real relations established between people.

In fact space is something "material" enough, an indispensable element in all human activity. And yet this very obviousness, paradoxically, deprived it of any demographic autonomy and prevented it from being used directly as a category in the analysis of demographic relations. A "demography of space" can only be the analysis of social

practices, given in a certain space, and therefore in an historical conjuncture. In considering further that proposition we should note that we do not begin from an abstract conception of space. As spatial locations exist through time we can understand that some spatial regions become for some time unoccupied. We can remove an "object" from some location, thus leaving unoccupied a location to which the "object" can be returned later. We cannot remove an event, leaving a temporal "hole" to which the "object" can be returned later. The process in question is that a location occupied at a time X may be unoccupied at a time X^1 ; the precise analogue of this is to be characterized as bringing it about that at one location a period of time is occupied (i.e. something is there occurring) and at another location that period of time is unoccupied (i.e. nothing is there occurring).

While there is a long history of beliefs¹³ about the "acausality" of space, it seems that there is no reason to accept the position that a spatial location itself of some occurrence can be a causal factor in bringing that occurrence about. The problem may seem a conceptual one but the "case" is real: a region exists if and only if some object has at some time some property, that is if some region of space is definable in a certain way (i.e., as containing a population) and later that same region of space is not so definable. A change is thus constituted by an alteration in the properties of a persisting object or by an alteration of the properties of a region of space. As any change in an object involves change in a part of space, it might seem possible to characterize all changes in objects in terms of changes in spatial regions. However, in a sense, the notion of change in a region

presupposes the notion of change in objects. For we can only talk about changes in spatial regions if we can re-identify them through time and the criteria of justification depends upon the identity of some objects through time; namely, the objects which provide the frame of reference in relation to which one identifies regions of space. Thus to have a notion of change in spatial regions it is necessary first to have a notion of change in objects; and in order to give a notion of the "demographic space", it is necessary to delimit what is to count as constituting a change. For instance, very different implications follow the case that the political situation in a certain area is undergoing a change - from being stable to being unstable, means more often than not - relocation of resources, flexibility in the boundaries of spatial locations, population movement etc.; that is change in the perception of the structure of space, if not of the regional space itself.

It is commonly held that the properties of space can be discovered by an a priori reflection. Treating the space-system from this position means to imply that space is distinct from the history system. With this line of thought, space is presented as having a standard topology, and as if that topology is established independently of the particular features of the given world. Space, (i.e. region, area, etc.,) becomes a sort of container into which different populations are placed and its properties are not a function of its contents.

This picture of space, and, accordingly, the spatio-demographic system as a container whose properties can be investigated without reference to its contents, is related to a network of abstract systematization - neither in virtue of facts about the history system

nor in virtue of facts about the system of temporal items.

3.2 "Settlements" in Time and Space

Every form of matter has a history, or rather, it is its history. This proposition does not solve the problem of the knowledge of a given reality; on the contrary it poses the problem. For, to read this history, to discover the laws of its structuring and transformation, one must break down, by theoretical analysis, what is given in a practical form. It is in this sense that an approach to the history of the process of settlement patterns seem to be the most comprehensive to the question, for it brings to the core of the problematic of the development of societies and shows, at the same time, an ideologically defined conceptual perspective.

Settlement patterns themselves, which tend towards great complexity, seem "independent" of site, once we no longer conceive of "settlement" as a juxtaposition of more or less understood sites, but as a field of "action" and a number of possible structures, combined and translated into a particular organization of a settlement. The same areas may have isolated hamlets, farms or villages while even mountains, which are forceful and rigorous sites, exhibit a variety of habitats based on cultural grounds. In fact, almost universally, the same site through history will have had "different" forms of settlements.

That point requires a further explanation. At first, when we speak about "settlement" we mean a community's arrangement at a certain time and into a certain area. Secondly, settlement presupposes location. That definition - settlement in terms of location - while at the same time defining settlement by appealing to the principle of

"identity" of the community¹⁴ - may appear as creating a circular argument. In reality this is not the case. Location as a concept is likely to possess an interesting dichotomy:¹⁵ indigenous morphometric postulates on the one hand contrast with derivative process postulates on the other. The emphasis may be placed on what Brynnes termed "connexite" in landscape or in geographic area.¹⁶ The interrelationships of a whole multitude of factors within an area create a "unique" personality for a given settlement and provide criteria for distinguishing regional units. This can be interpreted as a matter of linking the population theory governing processes to theories about spatial structure and form. This link demands a space-time transformation which is difficult to provide in most cases. The step from the system of things (which does not contain space-time objects but only extended objects with spatial and temporal relations between them) to the physical coordinate system is again a matter of decision. The choice of certain features, although itself not theoretical, is suggested by theoretical knowledge, either logical or factual. Internal questions are here, in general, empirical questions to be answered by empirical investigation. On the other hand the external questions of the reality of physical space and physical time are ambiguous. For assertions about that reality, only provide a framework within which to organize assertions about things in time and space. Such assertions are not thought of as being true or false in virtue of some independently existing system. They result from the intersection of pervasive time-geographic realities with historical properties and attributes "affecting" directly large segments of population and contributing on the life content of human individuals.

Every task or activity that a human individual conceivably can undertake is time-demanding. Existence through time-space at daily and lifelong scales, means that he cannot participate simultaneously in activities that are spatially separated from each other. Hence, every commitment to a task or activity diminishes both the finite daily (or lifelong) time resources of the individual and of the population as a whole within an area. In other words, whether viewing one human or an areally aggregated segment of society as a whole, only so many tasks and activities may be packed into a single day. Movement between any pair of points in space can only be accomplished through the sacrifice of time. Therefore a person can only take part in two successive activities, if they are so located in space that the distance separating them can be traversed with the transportation mode at his command. Space, moreover, has a "limited" packing capacity, or ability to accommodate events, no two physical objects being able to occupy the same (exactly) space at the same time. Any set of activities whose occurrence requires the use of uniquely designed physically fixed structures or objects must be placed spatially apart from one another, regardless of their timing. (this does not mean that two such activities cannot be physically adjacent to each other) Thus, even when time perceptions, conceptions and definitions are not sidereally based, or even when "real" measured time is distorted or totally ignored, time-geographic realities are operative. As a consequence of being locked into a new or modified role associated with a technological or institutional development a community may have the length of his "life path" reduced by conditions associated with that role.¹⁷ For there is nothing that time-

geographically can affect a human individual without affecting society as a whole. And because time-space is not a medium through which events pass but is created from the events themselves, it is "bound" into an historical dynamic of differential antithetical and contrapuntal forces; these forces and the connection of seemingly unrelated events and activities, identify, influence and transform the structure and organization of location and accordingly of settlements.

Virtually all models of settlement location and structure have one thing in common; they assume a measurable degree of order in spatial behaviour. (See Fig. 3, 4, 5) This seems to be founded on the following general premises which form the basis of, or are implied in, most models:

- The spatial distribution of human activity reflects an ordered adjustment to the factor of distance: Distance was one of the fundamental spatial concepts identified by J.D. Nystuen (in Berry and Marble 1968) and the importance of distance decay was enshrined in W. Tobler's (1970) first law of geography: everything is related to everything else, but near things are more related than distant things. The empirical effect of this is not hard to see; within geography with the emergence of the search for general theorems of spatial organization and underlying many of the classical models of spatial structure (as the central place models of Christaller and Lössch and the diffusion models of Hagerstrand) are assumptions about spatial interaction which, in the typical gravity model form, postulate a definite inverse distance effect which is capable of a series of mathematical expressions. These various transformations have such a

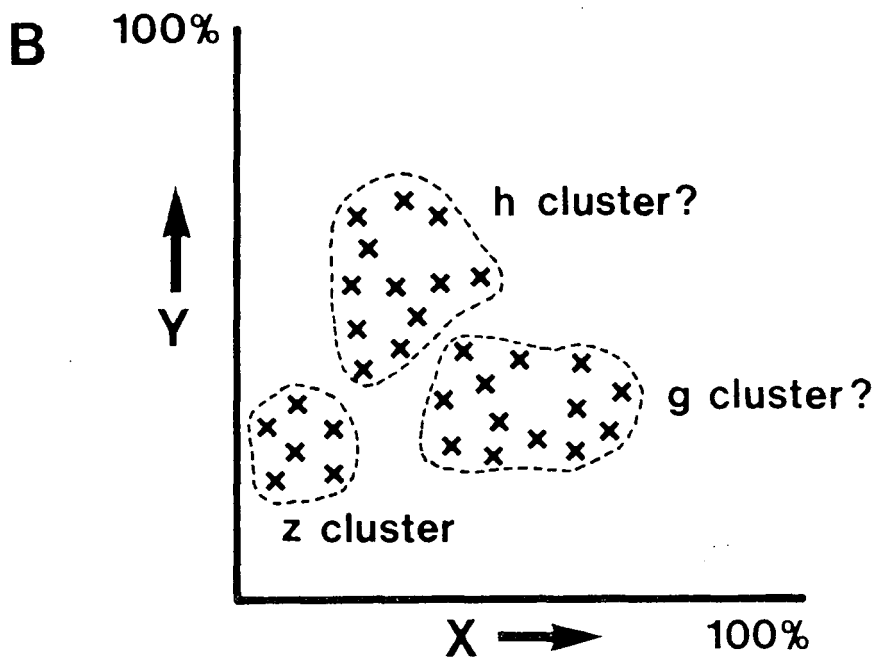
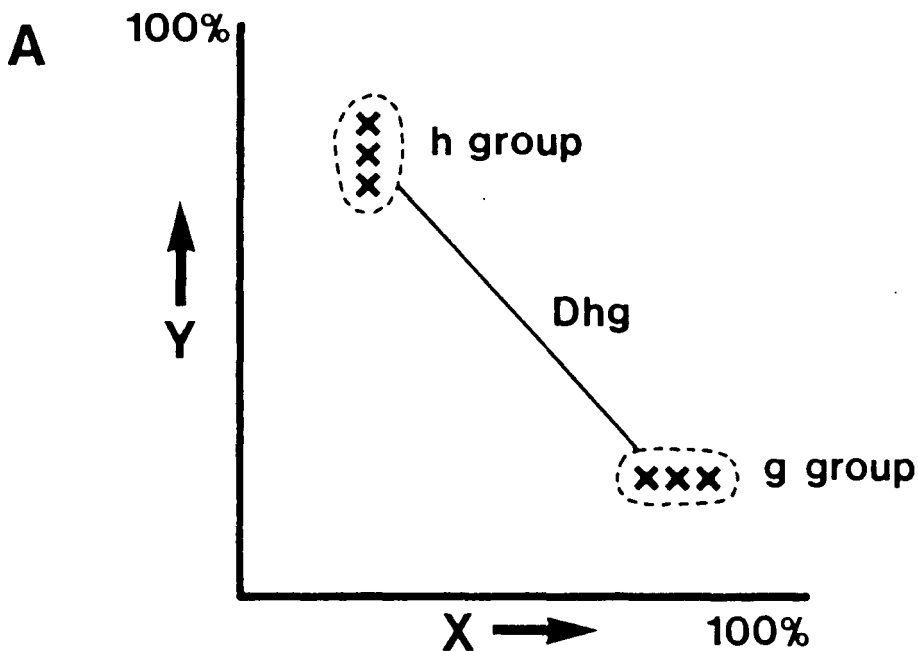


FIG 3.3 : The measure of distance for classifying in a two-dimensional orthogonal space showing:
 A - a simple case for grouping six observations in the space made up of two variables B - a complex case in which it is difficult to discern groupings in the space. (after Harvey 1973)

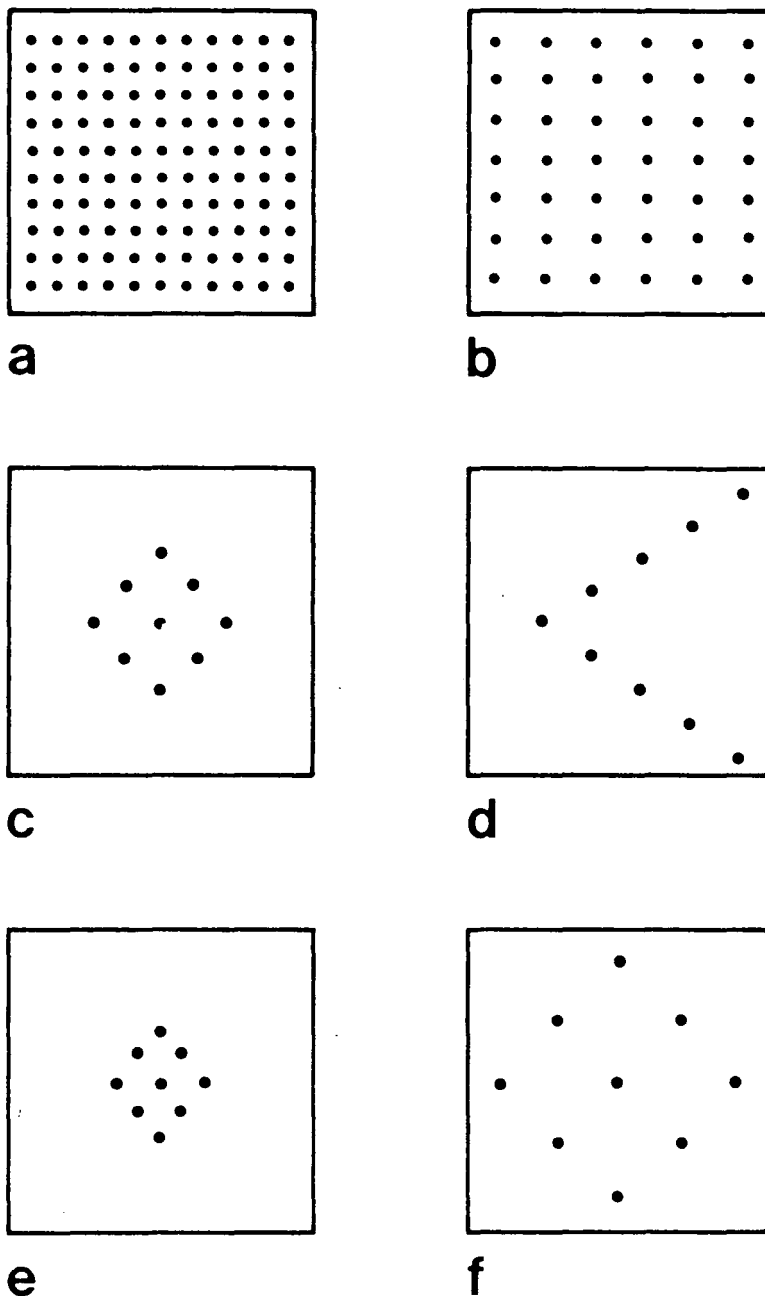


FIG 3.4 : Thomas (1965) used these diagrams to illustrate the following types of spatial distributions: A and B have the same patterns and dispersions but differ in density. C and D have the same densities and dispersions but differ in pattern. E and F have the same densities and patterns but differ in dispersion.

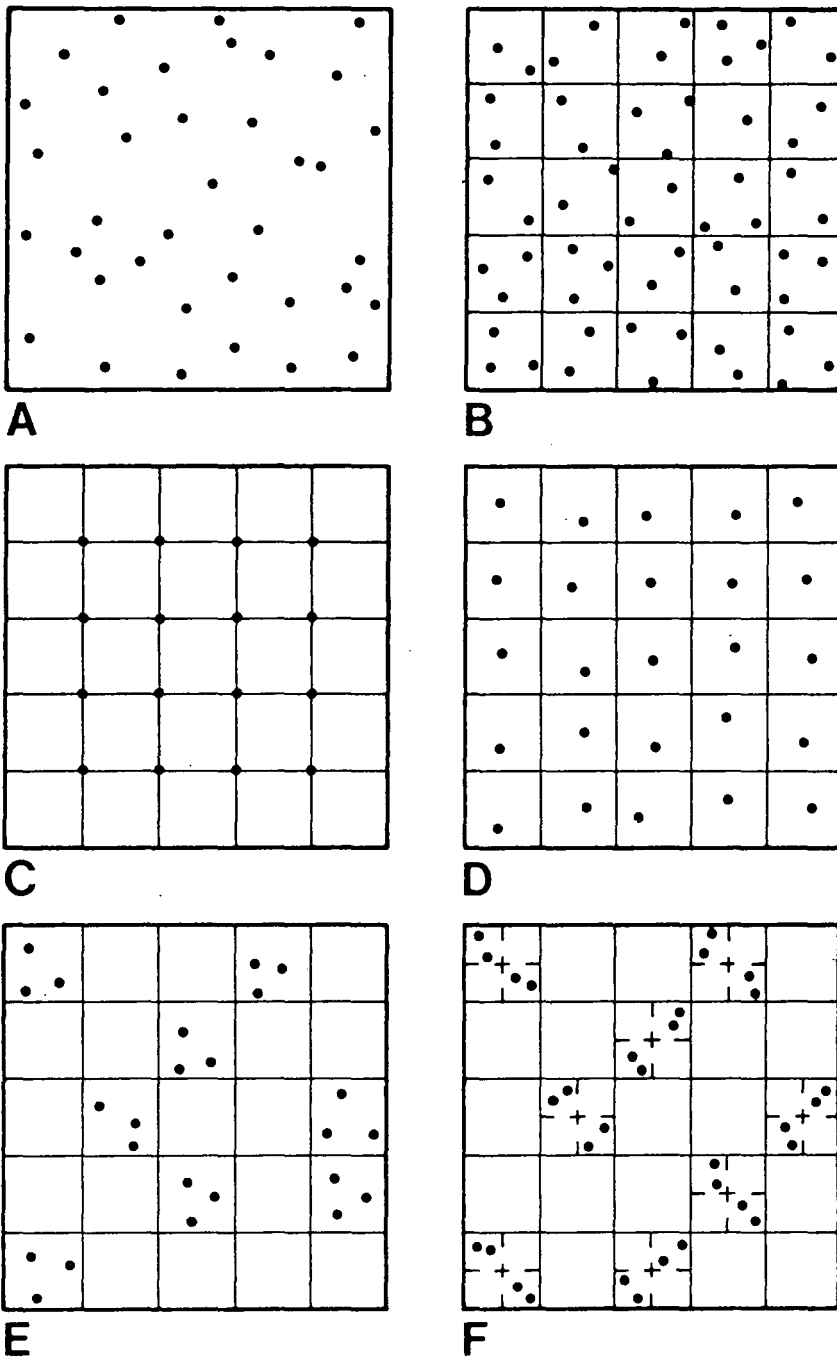


FIG 3.5 : Types of spatial point sampling:

A : simple random sampling

B : a really stratified random sampling

C : systematic random sampling

D : systematic unaligned random sampling

E and F : two versions of nested random sampling

(after Berry and Baker 1968; Kruschke 1960)

powerful effect on the lapse rate that G. Olsson (1980) argued that the identification of a distance decay "may reveal as much about the language I am talking in as it does about the phenomena I am talking about." But in any event distance is evidently not independent of the system within which interaction takes place, and in some locational models this is partially recognized through a parallel discussion of the accessibility of points arrayed on a movement surface (or network) around some hypothetical centre (e.g. the von Thünen model of agricultural land use or the density gradients of conventional urban land-use models) Because of these connections Bunge (1966) represented interaction and geometry (returning thus to an Euclidean notion of space/settlement) as "the inseparable duals of geographic theory" and Watson (1955) even goes so far as to state that geography itself is a "discipline of distance". This is not hard to see, for if all things were concentrated at a given place at a given time, there would be no patterns, no spatial variation or areal differentiation. It is clear that the matter does not end here, because such interdependence poses important interpretative difficulties. The search for "order" in spatial behaviour must be treated with greater flexibility and different distance measures can be applied and justified by the fact that different things are more or less relevant in different or similar types of settlements. For example, travel time, transport, or road distances, weight according to different kinds of parameters (among which the socio-economic is highly responsible) and non-linear distance measures must be taken into consideration, in determining the relations between settlements or sectors of settlement. Hence, while distance-decay curves can be

"identified" empirically, it is by no means clear how far their form depends on the models used to replicate them or to what extent their implication can be given substantive meaning.

- Locational decisions are taken, in general, so as to minimize the frictional effects of distance: this concept, generally known as the least-cost Weberian model (Fig. 6) or the law of minimum effort (Lösch 1954) makes the assumption that events reach their scope by the shortest route or otherwise, people move to choices and solutions which minimize "costs" and maximize "profits". (The theory has its archaeological extensions - the catchment area and territory approach which will be discussed in section 3.3) The theory has been criticized as too "noisy" in terms of its abstraction from real conditions: the location "optima" are not always so obvious and "cost" is culturally conditioned and affected by the socio-political organization of a society.

- All locations are endowed with a degree of accessibility but some locations are more accessible than others. But accessibility is not easily definable; in a technical sense it is a relative quality accruing to a piece of land by virtue of its relationship to a system of transport and communication. (today and in the past) In an operational sense, it is the variable quality of centrality or nearness to other functions and locations. Clearly the notion is closely related to socio-political factors, although, in most of the studies, it has been viewed as related to the movement-minimization concept and especially measured by the costs involved in overcoming distance.

- There is a tendency for human activities to agglomerate to take

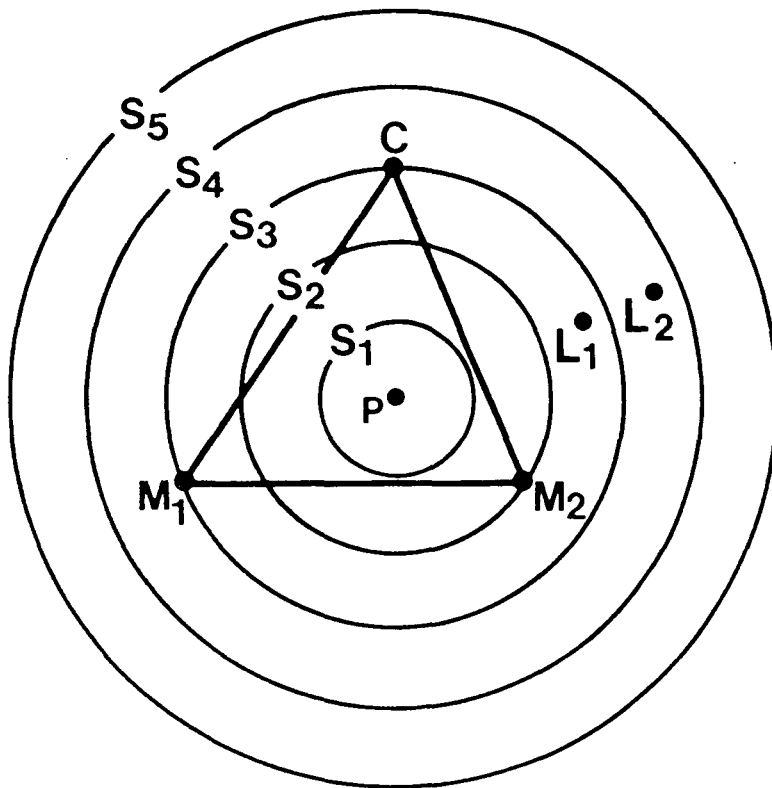


FIG 3.6 : There were materials, markets and cheap labour locations at fixed points and movements was possible in any direction at the same cost per unit of distance. From this idealized world Weber abstracted sources of two materials and a single market point (C) and posed the question of where would be the least-cost location (P) for production within this triangle. Weber used this, to demonstrate the circumstances in which the optimal location could be diverted from the least-transport-cost location (P) by economies of agglomeration or by cheap labour location (where the cheap-labour source would therefore become the optimal location)

advantage of scale economies: That is, the savings in costs of operation made possible by concentrating activities at common locations, which in turn form settlements viewed as a reflection of scale economies. This is a standardization which implies many problems, mainly because generalizations about patterns and processes at that level may not hold at another and strictly because the impact of other control mechanisms and relationships are ignored. Any significant modification, would necessarily involve a transformation of social relations. Despite this dialectical relationship, which may be established only within definite social relations of production, geographers - and social scientists in general - have interpreted "settlement" through an asocial methodology which has relied upon environmental and economic determinism. Although a socio-cultural "view" may be "generally accepted" it is rarely incorporated within the settlement studies.

- The organization of human activity is essentially hierarchical in character: The hierarchy of locations, based on the same general principles we discussed above, is frequently stated as being "true" for both spatial and non-spatial aspects of human activity. But if for example it may be true of political organization (although it may not be explicitly expressed spatially) it does not follow necessarily that it may hold for the agglomeration or dispersal of settlements. The "advantage" lies within the theory: more accessible locations appear to be the sites of larger agglomerations - which means the application of a "uniform" basis of explanation across the entire spatial domain - without any serious consideration of differential conditions responsible for the "behaviour" of the system.

- Human occupation is nodal in character: this notion underlies the concept of the nodal or functional region. The nodes about which human activity is organized are agglomerations of varying size and correspond to "stable" systems, hierarchically arranged, of different sized focal regions. Philbrick (1957) had argued that the areal structure of the occupance of the earth's surface is composed of a number of hierarchically "nested" orders of spatial functional organization. In this way, "least-cost" accessibility, agglomerations and hierarchies are linked together to form a system of human pattern in space where the most important elements of their existence are best understood with an automated, quantitative approach, while making no allowance for explanations including reference to the changing historical context (economic, social and political) of the settlements appearance and development.

Inevitably there has been an increasing amount of empirical statistical research and more mathematically oriented interest among researchers, which appears to be the result of the existence of accessible information for testing or elaborating this interest. The spread of settlement and technological innovations, however, have not taken place in a vacuum, but within the constraints not merely of the physical environment but also of institutional policies by which the patterns of land settlement were controlled.

In most cases, the settlement patterns of today depend in part upon the patterns created in the past. However, this is not the reason for a methodological enclosure. If the form of settlement is similar to the end result of a linear, cluster, uniform or random process pattern (Fig. 7), this does not necessarily mean that

X

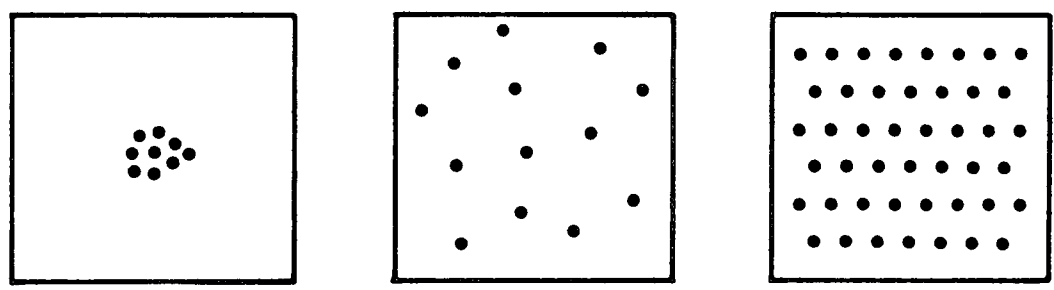
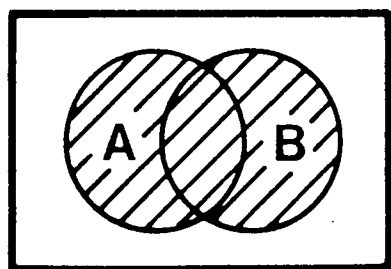


FIG 3.7 : Clustered, random and perfectly uniform distributions. (after Clark and Evans 1954, and Dacey 1965)

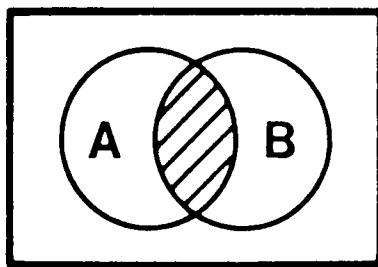
the process which produced the observed pattern was the same. The problem here is that no matter whether one is arguing in favour of a "unique" arrangement or whether one is arguing for "regionalization" by way of classification and grouping procedures, it is necessary to identify an "individual" (hamlet, village, town etc.). The short answer to this is that broadly two types of "individual" may be identified - the first by way of its space-time co-ordinates and the second by way of its properties.

It follows that transformation becomes important and the relationship between the two types becomes of like importance. The pre-suppositions involved are far less binding than a monadic diversion; in particular there is no need to make assumptions about the order of interrelationships among the variables used, which means that a particular class of elements so identified will share many features in common, but no element in the class needs to possess all the features used to identify that class or structure. (Fig. 8)

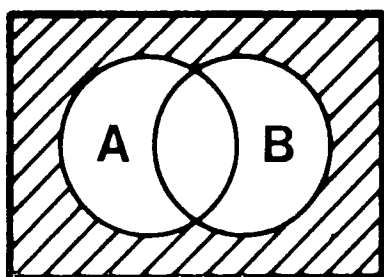
Analysis of existing settlement patterns has developed along model-building and quantitative lines, and these approaches have been used for urban as well as rural settlements and had a decisive impact on the formulation of archaeological settlement patterns.¹⁸ This being so, the fact that remains at the centre of the problematic is the observation that there is no law of nature which establishes a relationship in human affairs between quantifiability on the one hand, and importance on the other. Thus, in an attempt to understand the "evolution" and/or "preservation" of settlements through time, important aspects are ignored simply because they are difficult or impossible to measure quantitatively. To assign empirical content to



A



B



C

FIG 3.8 : A : the union of two sets (shaded area)
B : the intersection of two sets (shaded area)
C : the complement of set A (shaded area)
(after Harvey 1973)

an "abstract" calculus is not merely to determine the values of variables measured over the concrete entities, because the aspects of concrete reality to be taken into consideration in locational theories largely go beyond those susceptible to measurement whether the term is taken in its strict mathematical sense or in a broader sense which refers to mathematical entities and "models". The relevant phenomena of human settlements inevitably involve a constant interplay between variables of different kinds; and as such require historical comprehension to show how changing societal conditions have been associated with changing relationships with the local ecosystems and with changes in the "quality" of life of the communities. This evaluation encourages a sense of perspective with respect to the rate of change, and a balanced evaluation as to what the conditions and properties of a given set are.

These changes clearly involve a process of differentiation in building types and spaces. In general terms we are dealing with an aspect of history of the built environment - if we take history to mean concern with evidence of the past. The listing and classification of house types and forms have not given much insight into the processes of determinants of the creation of form. There have been some attempts to take a deeper and more theoretical look at the forces that create house form, but most have been implicit rather than explicit. All these attempts have suffered from two faults. First, they have tended to be largely physical determinist in nature. Second, no matter which specific-form determinant has been stressed, the theories have inclined toward a rather excessively simplistic attempt to attribute form to a single cause. These theories do not

recognize the fact that building form manifests the complex interaction of many factors, and that selection of a single factor, and changes in the types of factors selected at different periods, are in themselves social phenomena.

Buildings can be studied in different ways. One can look at them chronologically, tracing the development over time of techniques, forms, materials and ideas or thoughts. Each one may be a valid viewpoint but is plainly not absolute. Their predictive capacity depends on analogy by association, i.e. on repeated juxtaposition and coincidences of various aspects of community life. In fact buildings are basically nonchronological in nature.¹⁹ For example primitive and vernacular buildings have coexisted in the same area at one time or another with both "high" civilizations and modern technology. The geographic distribution of these buildings depends on their corresponding cultures. Almost all primitive and peasant societies display a typical "lack" of differentiation in the use of space and labour. This applies to work in general, which is "unspecialized" in a way, and hence applies to the way in which space is used. As spaces become more separated and differentiated the number of types of spaces increases. For instance, from man and animals being housed in the same room, we find them under one roof but in separate spaces, then separated but close, and finally widely separated. This multiple use of space affects the form of the house and settlement. A deterministic point of view neglects the idea of the house; just because man can do something does not mean that he will. Primitive and vernacular building provides examples in which knowledge of technology does not mean that it will be used. There

are situations where socio-economic values and needs take precedence over technological advances. This is an interesting point since the tendency is to equate technological advances with progress without thinking of the social consequences of adopting such advances.

Materials, construction and technology are best treated as modifying factors, rather than form determinants, because they decide neither what is to be built nor the form - this is decided on other grounds. They make possible the enclosure of a space organization decided upon for other reasons, and possibly modify that organization. They facilitate and make possible or impossible certain decisions, but never decide or determine form.

Another important consideration is why so many forms of the house have been developed within the limited number of climatic zones. Even the variation among micro-climatic types is relatively smaller than that found in areas of similar climate. In cases where climate is non critical, we find a great variety of house types and in severe climates, the forms of dwellings may be very different - and these forms cannot be explained in terms of climate alone.²⁰ There are cases in which the way of life may lead to almost anticlimatic solutions, with the dwelling form related to economic activity rather than climate. Typically primitive and vernacular buildings respond to climate very well. But this correspondence does not mean climatic variations are the determining factor for house form and settlements organization.

A third consideration of course is the impact of site as an essential variable. Similar site conditions can result in very different house forms and similar forms can be built on very different

sites. The fact that sites are often chosen on the basis of non-utilitarian or purely physical grounds has to be considered.

The choice of what is regarded as a good site brings with it physical effects and some consequent adjustments. Given solutions to adaptations do not always occur simply because they are possible. The physical setting provides the possibilities among which choices are made through the taboos, customs and traditional ways of the culture. Even when the physical possibilities of a site are numerous, the actual choices may be "limited" by the socio-cultural matrix; this "limitation" may be the most typical aspect of the dwellings and settlement patterns. Given a certain climate, the availability of certain materials and a certain level of technology, what finally decides the form of a dwelling and arranges spaces and their relationships is the ideas that people have on their everyday life. Buildings and settlements are the visible expression of the relative importance attached to different aspects of life and the varying ways of perceiving reality. The question, in effect, is concerned with how changes in a society relate to changes in the environment, as shown by physical form, and to what extent subsistence activities do or do not modify this reality. (This particular aspect will be discussed in detail in chapter four)

Attaching such importance to the culturally linked aspects of built form tends perhaps to lead to a position of complete relativism. As soon as a given culture or way of life has changed, its form would become meaningless. Yet we know that many artifacts retain validity when the culture which created them has long disappeared, and that housing and settlement forms are still viable, even though the

"meaning" attached to the forms may have changed very greatly. It seems that it does exist an element of "constancy" within differentiation, which needs to be considered. The logical disjunction is that the mechanisms of interaction between material/social variables that we try to identify are coincident with the topic being studied: namely the way in which communities were organized to operate as integrated systems succeeding or failing in their attempts to cope with circumstances. On the other hand, it does not necessarily follow that because we can deal with present day communities using particular classifications and categories those labels will inevitably be appropriate to the treatment and organization of long-term data.

The assumption behind a belief in the appropriate quality of contemporary labels appears to be that present moments represent a complete data supply that degenerates as it persists through time. But while there is no dispute that some specific elements of data are eliminated or raised, the process is not simply one of cumulative damage. The past is the only source of data on long term time trends. The premise that community behaviour is more than a sum of the behaviour and attitudes of the components members seems to adequately describe human groups and their settlements. Furthermore, the nature of social cause and effect operates differently at different scales of space and time. The critical issue is that past data in which documentary or direct verbal evidence of social patterns is not available are neither good or bad: it is questions that are appropriate or inappropriate.

3.3 Palaeodemography and its Regional Dimensions

In theory, for settlement patterns analysis it would seem that a region could be treated much as if it were a site. That is, it can be delineated on the ground, separated into units on the basis of different attributes and combination of attributes and systematically sampled. In practice, though, a region is so much larger and more complex a unit than the individual settlement that it must be treated somewhat differently.

A region in cultural ecology may be defined as a natural space within which exists a variety of resources that complement each other to enable population to be self-contained at the subsistence level. There are, however, several ways in which population is organized in time for the exploitation of these resources depending upon the technological equipment and economic potentiality.²¹ A single social group organizing itself at a seasonal settlement complex is one; several groups organizing themselves at several seasonal settlement complexes is another; several groups each settled in its own area and constituting symbiotic relationships is a third; a combination of symbiosis and seasonality is a fourth.

Regional settlement patterns may be one of the most important elements to understanding the ecosystem of a region as well as its cultural history.

Most settlement patterns studies have had two major objectives, the definition of ecological processes and the reconstruction of changes in institutions through time. They vary in the way in which the researcher views the interaction of these two processes. The derived demographic data has been used to measure the "success" of

the populations in adapting to their environment and as a measure of social evolution. The implication of this latter is that there is a relationship between the size of communities, organized²² societies and social structure. Usually inferences about the population of prehistoric sites or regions based on measures of utilized space are found in a simple equation: Population is some function of utilized space: $p=f(s)$. Two of the terms in the equation - population and function - are relatively non-problematic. The third term - utilized space - embodies a substantial number of problems. The initial consideration is to be explicit about the boundaries of the regions under investigation and this is depending on how the region is defined. The major contradiction of any regional structure is the region itself. First, it is not apparent how things like population activities can be defined usefully except by reference to "real" patterns and intensities of land utilization and settlements "pressing" against certain ecological limits. Secondly, we may say, for this purpose, that a settlement as "an archaeologically discernible site" is a unit of space characterized during some one culturally definable period of time by the presence of two or more dwellings or structures (community or component). It is somewhat narrow however in that it requires recognition of two or more dwelling structures. For many components or communities we do not have these data. One of the great difficulties is in fact the question of what is an archaeologically discernible site, which represents a cultural unit during a definable period of time and also represents a functioning cultural group.

(Fig. 9)

The problem is a permanent one for any demographical/archaeolo-

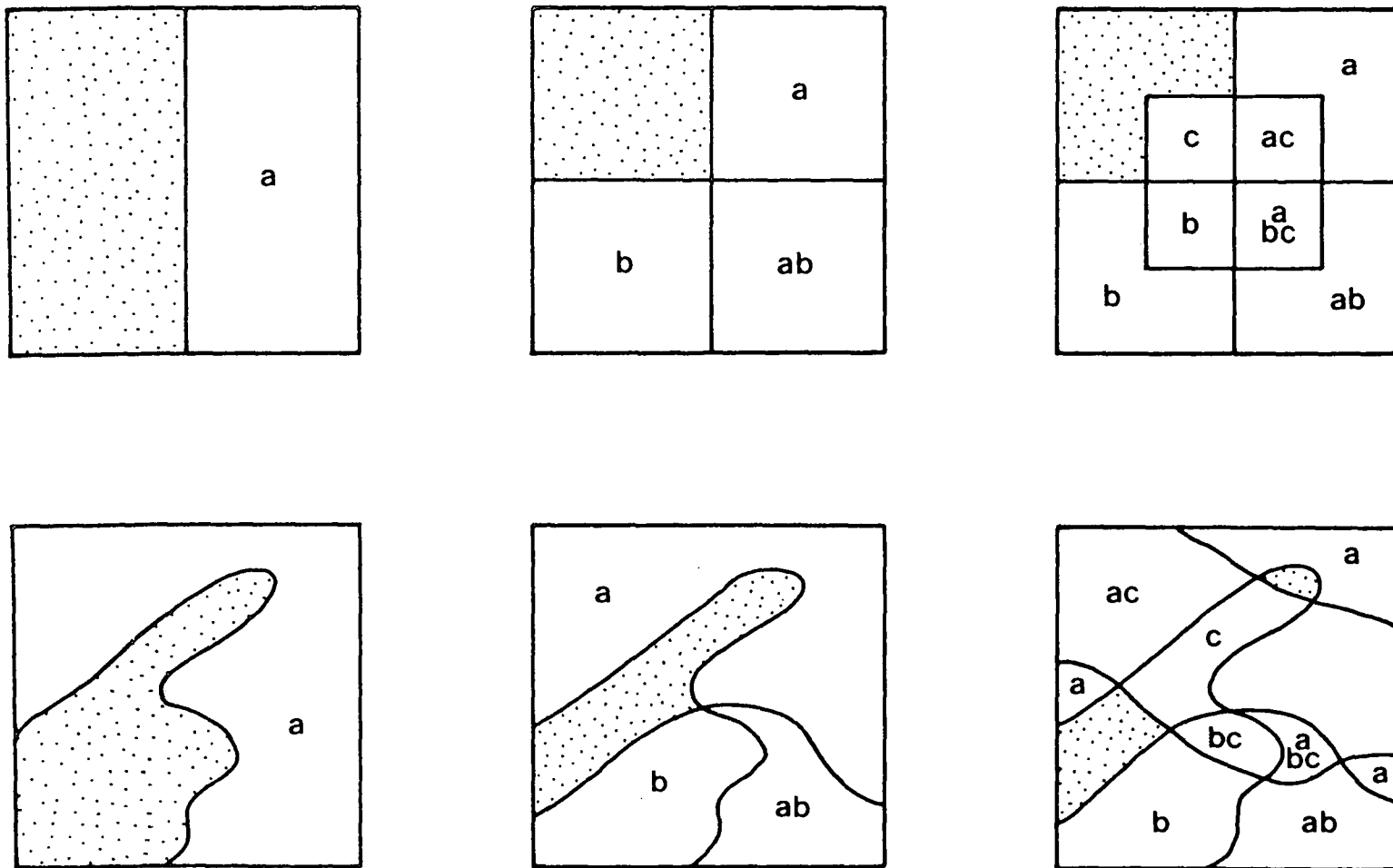


FIG 3.9 : The construction of a factorial sampling design for random sampling in population affected by multiple interactions. At each stage the region is subdivided by a further factor, and sampling is then random within each factor-combination region (after Waggett, 1965)

gical research; it would be naive to assume, however, that an archaeological site must be, or is, defined only by its dwelling structures of any form and size, because in this way any other source of information is excluded. Material remains of any sort comprise the archaeological data, with differing composition and structure, corresponding to certain levels of development of a community or group, and to changes with increasing or decreasing population, due to different and contradictory reasons, even within the same habitat. The demographic processes which link settlements of a given society and the socio-cultural mechanisms which integrate adjacent settlement populations have to be taken into account if the behaviour of a prehistoric population at a given settlement is to be fully explicated. The natural environment in which a given Palaeolithic settlement is located and the articulation of its prehistoric occupants with each other and with their habitat can account only for a part of the settlement's form. At least as important are variables which cannot be inferred from a settlement's archaeological and palaeoenvironmental remains, because they relate to its articulation with a supra-site entity. The site's social surrounding.

Thus the problem, amongst others, is to delineate the spatial dimension of a site, which is determined broadly by three criteria: physical contiguity, functional congruence and temporal contemporaneity. Time, it seems, takes precedence over space in this delineation, and in the concept of archaeological time the concept of "stationary" state is crucial.²³ Continuous space, in most archaeological situations, is not the main problem, referring of course to space^{'s} horizontal dimension not to its vertical dimension, which is temporal rather than

spatial. The main concern appears then to be the time relationship between each pair of archaeological objects in terms of their interaction in the context of human behaviour, and this is crucial for estimations of population in palaeodemography in any sort of context.

As the major development within palaeodemographic studies has been the derivation of demographic information for larger geographic units and estimation of population size, distribution and density through the various time phases the third point is to discuss the regional concept in relation to a number of different meanings. How do we define the region and especially regional patterns in palaeodemography?

In some ways, regional analysis may be regarded as a particular type of cognitive description; one that involves a space-time language rather than a property language. Regional analysis thus provides a framework within which may be examined shapes and forms in space. In general the assumptions are geometric ones and this amounts to identifying a co-ordinate system suitable for discussing the particular problem for shape and pattern of town locations, the structure of networks of settlement systems, spatial relationships of villages or communities and so on. The analysis is explanation in the sense that given two sides and one angle of a triangle in Euclidean space it is possible to predict the length of the third side and the other two angles. In archaeological, geographic and ethnographical contexts, it is possible to predict the occurrence of settlement given a number (say two) of initial settlements and the geometric laws of central-place theory.²⁴ The implications from this approach is a tendency to assume a priori a set of regional entities which exist and hence constitute "real" units. Much of the search for regional divisions

may thus be regarded as an attempt to identify geographic units. Given a relative view of space, however, the idea of such aggregates has to be profoundly modified. - A regional unit is not just a node in a network of descriptive value, but a node in many overlapping networks formulated according to varying criteria. Given a relative view of space, the problem then is to identify the co-ordinate system which is most appropriate for a given purpose. It is usually held that this is an empirical problem and that its solution depends on the kind of activity being studied. But activity involves discussing properties and therefore the choice is dependent upon the phenomena being studied. The same kind of problem emerges even under the assumption of an absolute space. It is a problem of significance. Again it becomes clear that objects and events have some place in regional thinking, for without reference to particular types of phenomena it is impossible to determine an appropriate co-ordinate system, to judge whether or not a system of regional division is appropriate or not and even, to some extent, to judge whether the objects and events examined in terms of spatial location are reasonably selected or not.

It is also natural that as operational methods change, and new developments take place, there will be a change in their meaning. Kuhn (1962) gives many examples of this in science in general, while terms such as environment and region in geography have shown an amazing variation in the way they are used and interpreted. There is therefore a need for flexibility and mobility in the process of assigning meaning. But this need is not necessarily incompatible with the importance of understanding the causal connections that bind diverse phenomena together with regional complexes.

The term region has taken on various connotations during its long use in geography; classically through chorology or an analysis of areal differentiation "in which the purpose of the study is to clarify a specific situation in a particular locality" (Paterson 1974). The region has sometimes been accorded the status of a theoretical entity, rather like an atom or a neutron which could not be precisely observed but whose existence could be inferred from its effects. The areal differentiation of the earth's surface could thus be "explained" with reference to this theoretical object which governed human spatial organization. (Harvey 1973) Later writers denied such a mystical interpretation of the term region and came to regard it as an essential mental construct for the organization of geographic data.²⁵ Others²⁶ have since indicated that the concept performs the same function as the concept of a class in any science and that therefore regionalization is nothing more than a special form of classification. But this notion can be confusing: once spatial phenomena are classified into regions it is not useful to explain the existence of such classes by reference to the regional concept itself.

The question of scale is linked rather broadly to the problem of classification.²⁷ In a special way, it relates to the problem faced by a human geographer or archaeologist who wishes to delimit a segment of space for purposes of studying a particular culture there. This is a case of dichotomous division creating a two-region system - within and without the culture space. The delimiting criteria which initially fit the scale may determine also whether viable sub-regions can be established within the cultural region. At the initial level

of the dichotomous division, location or site is determined by the delimiting criteria. Areas and points within areas are in or out of the culture space, on the boundary or within a boundary zone. (Fig. 10) For sub-regions developed within the culture space, locations and sites become a variable which need further attention. It is not a variable in the sense that positions change, but in the fact that different spatial sub-orders will suggest different interrelationships over space. The particular "selection" of sub-regional criteria thus may determine whether the interactions involved in creating the cultural complex (and accordingly population units)²⁸ will be identified or made sufficiently apparent to become the subject of a valid conjecture.

We have already noted the notion of landscape in geography, that is a complex of physical and human characteristics which give "individuality" to a territory. In an archaeological context the site comprises the "same" elements and is the result of a "humanized nature". Even if one was able to reconstruct what was the "natural" site and define the physical environment, the relationships between natural and humanized site are far from simple. Two similar and even adjoining natural units can develop to two different sites, concerning their internal and external characteristics, as for example, agrarian, demographic or industrial complexes. Several sites can succeed one another over time within the same territory, and human impact can completely alter the character of natural environment. The site, therefore reflects a "momentary" state of interrelationships, an "unstable" equilibrium between natural conditions, human technology, economic systems and demographic social structures.

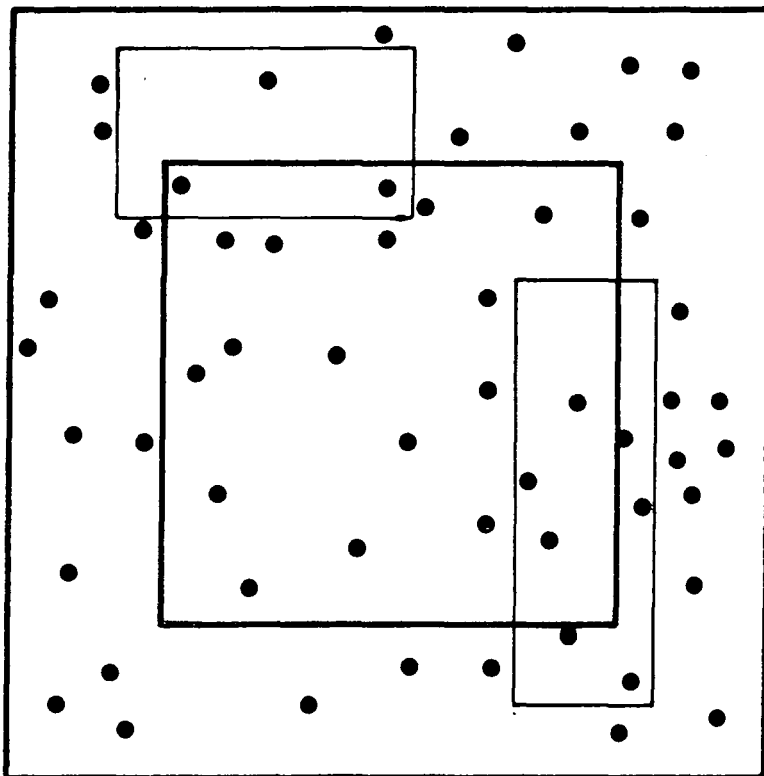


FIG 3.10 : The effect of imposing a boundary zone/s on a study area.

In addition each site incorporates a variety of inherited arrangements from the past. Even if spatial organization tends to confer a relative permanence to a site, this, although visibly real, cannot be explained without referring to factors as diverse as underground hydrology, land tenure, birth rates, productivity or religious practice. The very obvious implication of this is the general nature of archaeological work directed toward interpretations. No hypotheses are worth testing if they are not responsible to archaeological reality, for that reality is never responsible to any laws or law-like statements unless they are derived from it or can be "demonstrated" by it. Explanations in archaeology are hypotheses for the determination of the interrelationships between variables to account for the occurrence and the form of each, and the explanations also have many levels. At the highest level, explanations seek to disclose the interrelationships of a universal scope and to determine the primacy of one set of interrelationships as against another set, but such explanations are not always possible or even relevant in archaeology. Thus, searching for and confirming covering laws is only one of several related aspects of palaeodemographical research. Already discussed is the need to integrate such laws into a theory covering explanation - not only of a higher but of a lower order as well, that is establishing analysis at the point where empirical data is insufficient. Since the perception of underlying articulations ultimately depend upon parameters quite dissimilar, assumptions for a specific system require confirmation at all levels.

Data usually only represent a (nonrandom) portion of the time period and the site or sites under investigation, and are the result

of a concrete behaviour through which input stimuli are transformed into a socially defined idiom. The equilibrium population of a group represents thus the working out of these factors - given as well the specific antecedent conditions for that group and the particular technological and subsistence strategies. The properties of these factors and their effect on population size per se, are largely determined by the meaning ascribed to physical phenomena (i.e. the way nature and resource exploitation are perceived) through not only socially but economically structured categories.

A theoretical substratum has more than just illustrative value. Explanatory arguments in palaeodemography are primarily attempts to account for the specific observations that are made about data (settlements, or artifacts) in an archaeological context. As such, they are indicative expressions of human systems, the explanation of which depends upon the understanding of the processes operating in such systems.

It is on that level that the relationship between population size and area of habitation is of substantial concern to prehistorians. The area of a site is one of the few "measurements" available to account for the population size of extinct communities. That the site area tends to increase with increase in population size is a preliminary approximation. The precise relationship between the two, however, is not so obvious. Empirical observation has indicated that in some societies there are 10m^2 of habitation area per individual. (Naroll 1962). Wiessner (1974) has pointed out that Naroll's "law" relating habitation area to population size is not truly a universal law, but at best an average over several disparate sets of phenomena.

The question then arises of how to deal with such data in trying to relate the values of one variable to those of another. Minimally the relationship between area and population size depends on a) the spatial structuring of residence units in a community; b) the area allocated to each unit; and c) the number of individuals in a unit. The variability in these factors cross-culturally implies that there can be no single, universal relationship between these two variables. Rather, there will be a relationship "specific" to each form of spatial arrangement, with parametric values in the relationship, changing according to the area of residence unit and the mean number of individuals in a unit. The reference points and interactions established also vary from society to society and even within societies. Population density for example is a relative matter; there can be high density in areas of low population; while formally density is a ratio expressing the relationship between people and space, as Birdsell (1968) says, there is an economic as well as a spatial dimension when we consider population density and/or population pressure.

Obviously, when seen in this light the problem is even more complicated for palaeodemography than is usually thought. It is difficult enough to establish things like population size and density (absolute or relative) in time and space. When these have to be correlated with the carrying capacity and its fluctuations the problem is even more complicated. Any population uses different sorts of land in different ways and with different intensity. A community may use the resources of bush, forest, lagoon and/or sea. How much should be counted in a calculation of population size? and what is to be counted? Are the few acres under coconut palm to be counted in within

the hundreds of square miles of fish rich ocean? Likewise in calculating population-density, expected forest averages for example cannot be simply added to the intensely exploited farm acreage, nor can it be omitted. The situation is certainly too complex to be expressed by a single number. Rather it can be represented by the relationship between area and population that is between subsistence and society.²⁹ Given our present level of chronological control it is more feasible to estimate regional population size for a certain cultural phase by ascertaining the total number of sites representative of each settlement type containing maximum local aggregate populations, the sum of which comprise all the maximum subsistence settlement unit populations in the area. This data would provide population estimates for the area during the time span of the associated "cultural" phase, also requires a much enlarged scale of field research for demographic studies, once certain assumptions are made about the nature of "culture". The basic premise is that for a given "cultural phase" no single typical household or settlement also exists - but rather a complex regional population structure that relates closely to the settlement system. The substantive problem revolves around the fact that the palaeodemographer is dealing with the results of human decisions which are partially dependent upon perception of time-space concepts operating through social conventions. To define and explain not only the appearance but also the level of these interaction spheres is a requirement which needs to establish an "adequate" regional information field as a subject of investigation.

It is evident from the preceding discussion that regional definition stays closer to human reality by analyzing the organization of activities rather than by uniformity in the physical landscape. In that sense no precise dimensional criteria are necessary, because too

many variables condition the size of the zones of inference. Of course knowledge of the spatial combinations which form the landscape is indispensable for evaluating the potential of a territory, measuring its value and understanding the risks of disturbing the delicate equilibrium between the natural milieu and human groups. Conversely, even a highly individualized landscape cannot be separated from neighbouring landscapes with which it has complementary relationships. A region, on the other hand, is endowed with a certain self-sufficiency, not in the sense of economic independence, but in the sense that most of the functions and services of primary importance are represented there in such a way that the region is capable of satisfying most of the needs of its inhabitants. In these terms, the regional articulation of a territory is related to the nature of regional functions that is with economic and social development, which obviously varies considerably according to its stage of development, so that the dimensions of the regions vary, in space and time, with the degree of technology, population densities, levels of living (specialization of production, family and kinship organization) and inter-intra site communication.

In spite of the inherent difficulties, the flexibility of such an approach towards the regional concept, allows for estimations in palaeodemography which otherwise would not be taken into consideration; that is a series of determinants whose character is not dependent only by geographic position and/or location but by the intrinsic conditions of the area in question. Again, even in situations where evidence is not available by special units such as buildings or cemeteries, it becomes possible to evaluate the palaeodemographical pattern from factors "outside" the special location as such, thus retaining much

of the local orientation without falling into a functional bias. The data on changing pattern of adjustment and composition, documents the response of individuals to shifting environmental and demographic constraints and the historical material shows the impact of the cumulative consequence of these decisions on the environment and wider economical/political systems. The integration of local populations at a regional level offers the possibility to relate historically characteristic patterns of internal differentiation or similarity without rejecting their local elements. There is thus a corresponding de-emphasis on concepts such as carrying capacity or homeostasis used for estimations on population, and a shifting towards the importance of extralocal ties and of the access of extralocal resources, that is decisions on social, productive activities distributing or integrating populations to their region as a whole.

In palaeodemography where the problem of relating groups and communities with their "site" are obvious, a regional approach allows for the correlation of "continuous" parameters, even under uncomplete situations, and permits identifications concerning both the operation of the whole system of communities and the processes of their socio-economic evolution. The preceding considerations suggest that it is possible to apply systematic explanatory procedures to palaeolithic societies; the large number of settlements occupied in the course of a given state of a society, as well as the large number of artifacts accumulated in areas outside the settlements, enable us to derive information concerning their structure, in terms of those factors which are significant to their regional-historical articulation as defined by their mode of production and the forces relating to them.

3.4 The Dialectics of Region

It may be said that palaeogeography³⁰ has been more interested in the form of things than in their formation. The spatial differentiation of settlement and the formation of regional systems of settlement are affected to a certain degree by demographic factors. Palaeogeography is concerned with regional differences in the reproduction of population, its structure, and its relationships with the spatial regularities and peculiarities of settlement, as well as of the way these factors manifest themselves regionally and of their impact on the formation, composition and redistribution of population among and within various interregional and regional systems. Despite that, its domain has been one not of social dynamics, through which forms are created and changed, but of things already crystallized - an inverted image which prevents the apprehending of reality unless history is made to intervene. Forms do not have a life on their own; the most essential point of analysis then, requires the interpretation of human space as an historical fact, as the basis for understanding spatial reality, or for transforming that reality into one useful for any social organism. History after all, is not written outside of space, and an a-spatial society does not exist.³¹

This is because region itself is social, incorporates a definite object: the spatial aspect of the development of social production. Spatial reality is a dimension which is permanently engaged in its own re-adjustment under the influence of social and economic reality, but which at the same time exerts its own influence over that reality. The notion of socio-economic formation, thus, is more than an economic expression of history; the relationship between a society's "economy"³²

and its cultural, political and ideological activities is complex and the issue is not one of determining whether, for example, culture affects, influences or interacts with the economic basis, but rather of determining the precise way in which they are related. When Marx wrote "...a definite amount of space is always required at any given level of productivity" (Capital vol. 3) he meant to discuss the concrete ways in which societies produce spatial organization and build geographical landscapes that reflect their own requirements. This is a dialectical relation to the mode in which natural objects are transformed into use values for human use; it is here that the relationship between the natural and social aspects of life becomes more explicit. Any geographical landscape or set of geographical relations in a region is treated as the result of some process of past historical development. That process is a social process of production and so the "region" is seen to depend first and foremost on the kind of society established there. Different societies characterized by different modes of production produce different "regions".³³ Modes of production become concrete on a historically determined territorial base. From this point of view, regional forms would constitute a language of the modes of production. That is why, in their geographical determination they are selective, reinforcing the specificity of particular places. Mode of production, social formation, region - these three categories are interdependent. The fundamental basis of explanation is production, i.e. man's labour which transforms, according to historically determined laws, the region with which the group is confronted. One might even ask, whether it is possible to speak of socio-economic formation without including the notion of region. It

is actually a category of socio-economic and spatial formation rather than a simple socio-economic formation as it is usually conceived. Accepting this would make it possible to avoid the error of the dualistic interpretation of man-nature relations. Nature and space become synonymous as soon as nature is considered as a transformed or socialized nature, a second nature as Marx called it.

The social formation includes a structure of production and a technical structure. The concern in fact is with a technical-productive structure expressed "geographically" by a specific distribution of the activity of production. If the concept of social formation must "contain" the complex of different technical and organizational forms of the productive process which correspond to the various existing relations of production, it cannot be conceived of without reference to the idea of region. The localization of people, activities, things in space, may be explained as much by external needs, those of the "pure" mode of production, as by internal needs, represented essentially by the structure of all demands, that is the social formation itself. (Santos 1975)

Thus the dialectical relations between region and social formation are existing on the same "level" but are of a different order altogether, since they are formed in a particular region, not in region in general like the modes of production. This requirement of concreteness (Sereni 1971) does not at all mean that isolated elements can be perceived as things-in-themselves. The concept⁷ is inseparable from the concrete represented by a historically determined society. To define it is to produce a synthetical definition of the exact nature of the specific diversity and unity of the economic and social relations which

characterize a society in a definite epoch. (Godelier 1978) Taken individually, each regional form is representative of a mode of production and the history of the social formation is the history of the superimposition of forms created by the succession of the modes of production, of their entanglement with its "regional territory". A mode of production organizes the process of production into a particular form in order to have an effect on nature and obtain from it the necessary elements for the satisfaction of society's needs. This society and its nature - that is, the portion of nature from which it extracts its production - are in a sense "indivisible" and constitute at once a concrete totality and an abstract totality. Thus any discussion of human agency in transforming the environment must reject all form of determinism in the sense of utilitarian explanations of social activity. The modification in the role of form-content - or of the function conferred on the form by the content - are subordinated to, even determined by, the mode of production as it is realized in and through the social formation. Thus the movement of space suppresses, in a practical and not only in a philosophical way, all possibility of opposition between history and function. The lags in evolution on the part of particular variables are opposed to the simultaneity of their functioning within the total movement of society; whence the unity of synchronic and diachronic processes. (Santos 1975) The time lag with which a mode of production imposes different vectors on each portion of region is responsible for the different "lifetimes" of its multiple elements or variables. Diachronism is at the root of regional evolution, but the fact that the variables act synchronically - that is, in an "arranged" order - inside a social and economic organization

- assures the continuity of the region. The total reality which is the set of conditions characterizing a given society has a particular meaning for each place, but this meaning can be grasped only at the level of totality. In fact the redistribution of roles achieved at each new moment of the mode of production and of the social formation depends on the quantitative and qualitative distribution of the infrastructures and on the attributes of the region. Cosgrove (1983), following Polanyi (1958) and Sahlins (1976), has suggested three broad modes of life wherein the dominant site of production is differently located. 1) In primitive societies, that is those which Polanyi characterized as having reciprocity as the dominant mode of economic integration, the primary location of "symbolic" production is in the social constitution of kinship. This is then mapped across other institutions, including the economy as producer of goods and the region. It determines the possibilities and limitations of the forces of production made available to achieve culturally determined ends. 2) Archaic formations are dominated by a mode wherein "symbolic" production is primary located in the politico-religious sector, and thence mapped across all others. This gives the foundation for structuring regions and/or landscapes centralized around a sacred centre in what Polanyi refers to as redistributive societies. 3) Finally, capitalist society elevates economy to a position of dominance so that it "throws a classificatory grid across the entire cultural superstructure, ordering the distinctiveness of other sectors by distinctions of its own" (Sahlins 1976). These three modes of "symbolic" production provide only a crude outline and typology. They resemble Polanyi's three forms of economic integration:

reciprocity, redistribution and market economy. But unlike Polanyi, who inverted the base-superstructure model for pre-capitalist formations, arguing that in them economy was "embedded" in society, these three categories maintain cultural encompassment throughout, varying only in the location of the key site of "symbolic" production derived from Marx (1964). Thus modes of production are not definitions of specific societies. Regional or landscape studies which employ them are best developed under the concept of the socio-economic formation which expresses the unity of the diverse economic, social, political and cultural spheres of life and places that totality within the concrete conditions of a specific historical and geographical context. The term is used by Marx in a double sense: at first it covers society throughout its existence and then it applies to a definite historical stage in the development of society.³⁴ It is in this second sense that the term went into the theory of dialectical materialism. It is in this sense also that its application for the delimitation of regional systems through time, can provide a deeper critical insight into the conditions with which regions are produced, shaped and reproduced. And it is from this standpoint that Marx's method generates quite different perspectives and conclusions from those generated by simple logical empiricism. Logical empiricism has the capacity to inform as to what is, given an existing set of categories. Dialectical materialism on the other hand is not just a convenient method that we may fit to observations, as one may choose between a linear or non-linear model. The basis of dialectics, in the manner that Marx used it, is "constructivist" in that it sees change as an internally generated necessity that affects categories of thought

and material reality alike.

There is another important point with regard to the above remarks. Because dialectical use of "language" is relational rather than absolute a thing cannot be understood or even talked about independently of the relations it has with other things. For example natural resources can be defined only in relationship to the mode of production which seeks to make use of them and which simultaneously "produces" them through a certain human activity. There is, therefore, no such thing as a resource in abstract or a resource which exists as a "thing in itself". To establish the distinctions between areas, to delimit the diffusion of phenomena upon a territorial unit, is still not regionalization; it remains a geographic differentiation upon physical characteristics and reflecting physical properties. It is an attempt to find some tangible objects on which to "hang" regional processes. Physical-geographic regionalization proper is based on natural regularities, and the natural regions that are delimited on the basis of a set of criteria usually vary in their natural conditions. Such regions are "constructed" on the basis of natural processes that flow "regardless" of the will of man or of the purpose of their utilization by man. But in general, "real" regions will not coincide with physical-geographic regions, as a region is really a totality comprising parts of internal reciprocal relations, integrated in a "behavioural" system of several characteristics that are relevant for particular purposes. In that sense, what is truly material for a region is the conception of its reality as a totality of inter-related parts and the conception of these parts as expandable relations such that each one in its fullness can represent the totality. X

These in turn are expressed by one form of appropriation of the nature and natural resources, or another which gives to each region a distinctiveness "outside" its purely geographical regularities; what is meant by that, is that a "similar" regional complex can be found under "dissimilar" geographical units and outside any national boundaries, so that the distinctiveness of the region becomes a property depending on, and related to its socio-economic setting rather than to its particular physical one.

Despite all the complexities the results of human activities in any historical epoch must be considered in any "regionalization"; aside from the actual kinds of human activity, physical-geographic regionalization should also consider the extent to which these activities tend to modify the natural system in area and in degree affecting several components of the environment, the entire environment or a single component of the environment. This is precisely why a regional unit cannot be established by means of its own initial existence, although this very existence is of course a prerequisite for its establishment.

In dialectical terms, a region is not a "static" approximation of territorial conditions but a constant and dynamic articulation within a network of productive relations which "shape" its existence and "define" its boundaries. It is interesting to note in this context that dialectical reasoning includes conventional reasoning but not vice versa, just as human action includes regional forms but not vice versa. The indication is, therefore, that conventional modes of categorization and descriptions of spatial forms project only surface features, while dialectics represents deeper structures, which have a

necessary role in the actual operation of the region. First, it is a way of analyzing the function and distribution of forms in space; secondly it is a way of explaining historically these forms in time. The two kinds of specification are complementary. Neither is sufficient in itself. The unifying theme of the entire analysis is at the end, the evolutionary (or devolutionary) transformation of a regional unit, not related to some single factor but to a system whose origin, existence and development include, internal dynamic properties and tendencies manifested in the actual distribution of socio-economic forms.

3.5 Summary

To speak of spatial demography seems, perforce, to speak of two distinct elements - distinct as regards their origin and context; yet these elements are closely linked by the dialectics of their historical status. On the one hand are the people, their productive and social activities; on the other hand is a given space within which people move. The crucial point then is that we must define, at any level of analysis, how, and according to what strategy, a given space has been produced, and to "delimit" its contents - that is of the people using that space, people who perhaps are opposed to the physical form of purpose of that space. At the outset, it is necessary to move through spatial description into an analysis of the social processes which originate spatial appearance. While social processes (especially under the capitalist mode of production) have an inherent tendency towards various kinds of uneven development (thus in terms of spatial arrangement, producing centre-periphery forms at every scale), it is

obvious that natural environments also impart their particularity to such developing processes. Environmentally - embedded processes, geographical instances of specificity, move through time under dynamics which reflect and contain their particular geographical circumstances. This whole geographical aspect of social process was recognized by Marx in the most basic of his writings on historical materialism. Thus, for example, in the "Grundrisse", Marx states that property relations in the original, primitive communal mode would take different forms depending, in part, on environmental conditions, but that this does not prevent the same economic basis - the same from the standpoint of the main conditions - due to different circumstances, relations and historical influences from showing infinite variations and gradations in appearance, which can be ascertained only by an analysis of the given circumstances.

Thus, region develops under the stimulus of a sequence of changing material events. Such events are perceived and experienced, assigned a place in a pre-existing but changing order, and "appropriated" or incorporated to become part of a population's spatio-demographic relations. As these relations are fundamentally the collective production and reproduction of the material basis of human life, societies are basically characterized by the social relations of production. What Marxism asks of social processes are two particularly related questions: one concerns the relations between processes and their natural conditions of existence; the other, the relations across space between processes, or specificities of processes, within different geographical environments. Hence, while regions provide a determining context for the development of populations, the determin-

istic relationship between the two is a dialectical one. This allows populations, communities or groups to achieve a dynamic on their own in which change may take both quantitative and qualitative forms. The expression of these forms incorporates apparently differential categories: population concentration, dispersal and movement, resource utilization, instruments of labour, territorial organization etc., which, despite their very different programmes for explanation stemming from their contrary dispositions of the problems, all have a common underlying factor: all are the results of human, collective behaviour, and their spatial relations are determined mainly by the movement of their originating and receiving social processes. Therefore there exists a need, for examining not only these differential categories as independent variables, but also choice at the organizational level. Attachment to or alienation from place or locale is an integral part of the process of social structuration. Furthermore the role of the region and of regionalization could be interpreted as that of mediating between site and space, in a way somewhat analogous to the group's mediation between the individual and society. The significance of place to specific groups, bands or communities in history, thereby becomes a critically important palaeodemographic concern, embracing not only biological reproduction but also production and reproduction of the means of subsistence, that is its economic structure.

The transformation of a social formation from one dominant mode of production to another is thus the result of both ^{the} indigenous, "autonomous" movement of that process, and change in the "net" of spatial relations with other processes. A new mode of production appears in its classical, pure form only in articulation with the prior

mode in its region of origin. Elsewhere the social formation is the product of the articulation of a certain pre-existent mode of production and the received form of a diffusing newly dominant mode. In that sense, production as a whole incorporates a definite object, subjects involved in labour activity, instruments and a consciously set objective. Social relations of production are, together with nature and the forces of production, fundamental conditions of population activity. Little, if any, attention has been given to the extent to which such spatially defined entities have any palaeodemographic significance. The more recent interest in Marxism is helping to rectify this state of affairs and to examine the dialectic of the whole through the particular dialectics of its geographical instances and their spatial relations.

Notes and References

1. P. Hagget 1965.
2. E. Cassirer 1957; D. Harvey 1974
3. K. Lowell 1961; J. Piaget 1956.
4. A. Hallowell 1955; D. Harvey 1973; M. Jammer 1954; B. Russell 1961.
5. Childe (1949) has noted how the Greeks were able to solve a number of problems which the Babylonians could not simply because they replaced the Babylonian concept of space (which was essentially additive in metric) by the concept of continuous space. For the concept of location in classical geography see also: F. Lukermann 1961:

"One of the earliest examinations of *choros* is in the *Timaeus* of Plato which probably borrows heavily from Pythagorean doctrine as viewed by Parmenides. *Choros* in the cosmographical context of the place of being is usually translated as space, but space here obviously means the place where something is. The most extensive analysis of *choros/topos* in classical literature is in Aristotle. In his discussion of *topos* he uses the term *choros* exclusively in the sense of area - an extended place. *Choros* and *topos* are the relationship of things. There is no space or place without things. On the other hand, we cannot mean by the place of something, or the space of something the thing itself. We must mean by *choros* and *topos*, space and place as the relative position of things one to another. (the words *choros* and *topos* are a problem, particularly in their translation into other languages).

Choros should never be translated as space, if the connotation of that word is "empty" or "absolute" space. The Greek word for empty or absolute space was kenos (void) or chaos. Choros literally means "room" and may safely be translated in context as area, region, country or space/place - if in the sense of the boundary of an area. Choros technically means the boundary of the extension of something or things."

M. Castells 1972.

Cultural change often involves change in spatial concepts but on occasion the sudden need to reappraise spatial concepts through scientific discovery has delivered a powerful jolt to an existing set of cultural values.

6. W. Christaller 1972; W.M. Davis 1954; A. Lösch 1954; G.P. March 1854; R. Richtofen 1883; C. Ritter 1852.
7. Community with the sense of a spatially delimited set of interacting groups. Although scale problems reflected in everyday speech make definition difficult, common elements (area, social interaction, economic activity etc.) suggest that much of the everyday life in a locality is underpinned by shared values. See also Marx, Grundrisse (Notebook IV) where "community is the first presupposition - the communality (Gemeinschaftlichkeit) of blood, language, customs - for the appropriation of the objective conditions of life .. life and of .. life's reproducing and objectifying activity"
8. K.W. Butzer 1978.
9. R.D. McKenzie 1926; E.A. Wrigley 1978.

It should be noted that in fact all the work of known "spatio-

logists" like McKenzie, Burgess, Wirth and others, uses a series of notions, the scope of which goes beyond an individual study, and on which, in fact, much work is still based. It is this effort to construct a true theory of space, so infrequent in a field swept alternatively by empiricism and futuristic prophecy, which explains the persistence of conceptions directly linked to evolutionist organicisms of the oldest kind. Radical geography developed in part from a negative reaction to the established discipline, and moved very quickly through a stage of liberal theory to Marxism.

10. P. Haggett 1965; D. Harvey 1973; M. Santos 1979. For a relatively up-to-date and complete outline of these theories and their corresponding literature see: W. Isard 1956; R. Peet 1978; M. Quaini 1982. Further developments in the same direction can be found in the journals: *Antipode*, *Progress in Human Geography*, *Geoforum*, *Journal of Regional Science* *Geographical Analysis* and *Soviet Geography*.
11. P. Haggett 1965. See also Haggett's article: *Forecasting alternative spatial, ecological and regional futures: problems and possibilities* in R. Chorley 1972. Also: *Haggett-Chorley: Models, Paradigms and the New Geography*, in R. Chorley-P.Haggett (eds) 1978.
A.H. Jensen 1980.
12. D.L. Clarke 1977; I. Hodder - C. Orton 1976.
13. P.W. English - R.C. Mayfield 1972; R. Hartshorne 1939, 1958; D. Harvey 1973; R.J. Johnston 1980; W.H. Newton-Smith 1980; R.D. Sach 1980.

14. V.A. Anuchin 1977; M. Quaini 1982.
15. D. Harvey 1973(a.b); D. Massey 1977; R. Peet 1977;
A.Y. Fedina 1980;
K.I. Gerenchuk 1980.
16. Agafonov, Anuchin, Lavrov 1983; A. Donde 1983; A. Fremont 1976;
E. Juillard 1972; V.L. Kaganskiy 1983; C.V. Levedef 1961;
D. Lowenthal 1972.
17. A. Pred 1978.

It is more than evident and not even necessary to give examples of how and why technological innovations may affect population, life and location creating new opportunities but generating also new problems, new forms of control and dependence on the political and sociological level.

18. D.L. Clarke 1977; K.C. Chang 1967, 1972; I. Hodder - C. Orton 1976. For a more detailed discussion on the issue as well as relevant bibliography see: Chang, Clarke, Cook, Hodder-Orton.
19. C.R. Anderson 1960; A. Rapoport 1969.
On this issue see also the journals: Architectural Review, Horizon, Landscape, Ekistics.
20. J.E. Aronin 1953; B.B. Rodoman 1980.
21. A. Fremont 1976.

Marx: Grundrisse, The German Ideology ,

Marx-Engels: Precapitalist Socio-economic formations.

It is necessary to point out that Marx makes it abundantly clear on numerous occasions that he in no way was a technological determinist, that the human use of machines and not the machines themselves, is the proper focus of social scientific under-

standing; "Machinery is no more an economic category than the ox which draws the plough. The application of machinery in the present day is one of the relations of our present economic system, but the way in which machinery is utilized is totally distinct from the machinery itself. Powder remains the same whether it is used to wound a man or to dress his wound."
(Poverty of Philosophy).

22. The word "organized" is used in the broadest sense (organization of any type of community, band, group or state).
23. A distinction must be made between stationary state and steady state insofar as these terms are applied in archaeology. Stationary state first used by Chang (1967).
24. G.W. Christaller 1960, 1972; M.F. Dacey 1965; A. Lösch 1954. The model has been used extensively in archaeological settlement patterns and in Palaeodemography (see especially S. Cook 1976; K.C. Chang 1967; F. Hassan 1979; and I. Hodder-C. Orton 1976) as well as the article by G.A. Johnson in Man, Settlement and Urbanism (eds) Dimbleby, Tringham, Ucko 1972.
25. R. Hartshorne 1958, 1959.
26. W. Bunge 1966; D.D. Grigg 1965.
27. It is not part of this work to discuss the methodological problems of classification. The problem is by no means unique to geography. It has already been pointed out that a division of the earth's surface based upon the totality of its natural properties is unattainable, as there is not the same type of connection between them (i.e. between climate and physiography or between either of these and vegetation for example). The nineteenth century

taxonomists were concerned primarily with properties "inherent" in the objects classified. But gradually, the need arose to classify "things" on the basis of their relationships. The "things" involved may be quite dissimilar or in any event their similarity may be irrelevant. But the main objective is their association within a certain system. It could be added here, that even among those who recognize that regional systems are not a classification of entities that exist in nature, there is still a tendency to forget that "lines on a map are rarely real and that any given classification is but one way of looking at the world." Although the belief that there can be a "correct" classification has had unfortunate consequences in biology, geography, archaeology (and especially in Palaeolithic archaeology where community, band, society, population, group were "locked up" into a series of static types (techno-cultures, techno-complexes, tool types and the rest) the misinterpretation of the word "natural" has led to particular difficulties in the study of regions. (In England for example the term "natural" was introduced by Herbertson (1913), who clearly confined its use to regions based solely on features of the physical environment, and this remains the general "trend" till today in most of the studies). Given the belief that there can be one "correct" classification, it is not difficult to envisage a situation where the construction of classifications becomes an end in itself, simply by arranging objects in classes with no deeper understanding of their association, relationships and changing structures.

B.J.L. Berry 1958; B.J.L. Berry - A.M. Baker 1968; B.J.L. Berry - D.E. Marble 1968; English-Mayfield 1972; D.B. Grigg 1967; D. Harvey 1973 (a); R.R. Sokkaal - P.H.A. Sneath 1963; A. Tarski 1965.

28. In part, the problem depends upon whether the population is conceived of as being made up of aggregate elements or of individual elements, and in part it depends upon whether locations or events are being referred to. Duncan et al(1961) have examined in detail some of the consequences of specifying populations in different ways. To the statistician the population merely consists of abstract units. But to the palaeodemographer or geographer the population comprises a class of "objects", events or numbers that are of direct interest. For example, it is not possible to give an account of the South African population on the scale of locational/regional "frequency" without taking into consideration and evaluating the internal characteristics of the formation of that "pattern".
29. From a systemic point of view, one excavated site represents a single excavation of one settlement "type", and does not reflect the whole settlement system. To reconstruct a settlement system, it is necessary to work within a regional "universe". The problem is to identify the region and its exploitative maintenance activities which are differentially distributed within the geographic area, encompassed by a culture; therefore no site can be expected to reflect more than a fraction of these activities. If the aim is to describe prehistoric population patterns the frame of reference must be regional and not be confined within

the boundaries of a single site.

30. By palaeogeography we refer to that area of investigation concerned with the linkages between the population in a region and its settlement patterns and between regional population structures and systems of settlement.
31. M. Santos 1977; D. Slater 1977.
 We emphasized in that study the "concreteness" of the region as far as it concerns the transformation or events within them. A formalistic approach would (in contrast to a dialectical one) be the study of regional forms separated from the society which animated them; society creates infrastructures and activities whose locations do not necessarily follow the laws of a formalistic "space" analysis.
32. We have already indicated that Marxism is often accused of economic determinism - economic factors determining everything. Marx, however uses economy in the classical Greek sense (oekonomy); that is, the social relations to nature, rather than economic in its modern sense, and even then he does not argue that everything is so determined. (Marx: Grundrisse, Capital, Marx-Engels: Pre-capitalist socio-economic formations, Engels: Anti-Dühring.
33. Under capitalism, for example, market processes operating in the sphere of exchange and class relations-usually between capital and labour - prevailing in the work place "congeal" in such a way as to make the "law of value" the dominant regulator of the production of space and the relation to nature. X
34. Preface to ^A Contribution to the Critique of Political Economy. *

CHAPTER 4

Demography and Economy

4.1 Economic Formations: What is the Question?

Probably the major question of historical demography is the nature of population changes concurrent with economic expansion and growth. Usually this question centers on the timing of agricultural and/or the industrial revolution in a region. Although there are other questions addressed, the nature of demographic transition, pervades the majority of research, with a stereotype insistence on the three notions which constitute its stages of development;¹ that is, a) high fertility and high mortality b) low mortality and high fertility and c) a return to equilibrium as a result of low fertility and low mortality. We have already discussed, that while many of the features of demographic transition have occurred historically, the stages are not always present or in the same sequence; different areas experienced different transitions and neither "developed" "developing" or "underdeveloped" societies exemplify the model consistently. Moreover the model remains "confined" to an epistemological conception which uses only the "external" characteristics of a population as a whole. That is the most general and "static" aspects, - which means that it is difficult to use it for a more specific or diachronic analysis; the model remains unrealistic and the population configuration an abstraction so far as it does not relate to a definite "stage" of development: production by social individuals.

Attempts to reformulate the traditional view by posing questions on the directionality of influence between population and resources

or population growth and whether population expansion causes or results from economic change² remain one-dimensional and simply registering empirically the findings in the past, without equating historical inquiry with what was in the past, in relation to the condition of the present, and to what should be in the future. Anthropologically, such projected futures are clearly difficult to define. They should be debated, compared and contrasted. But this does not change the determining point: relations between experience and reality are dialectical and are continuous.

The immediacy of these relations becomes crucial at the level of identification of productive activities and economic integration. To operationalize these categories, a frequent strategy is to select one or a few resources which are critical in a given situation and to study their effects on a population; that is, a homeostatic approach, considering the presence of necessary resources and the nature of the distribution of these resources within a given range of habitat as "the regulating mechanism" of the population unit(s) to persist successfully. While many categories have been suggested, these are usually operating within the limits and possibilities set by the nature and location of such resources,³ that is, generally concerned with their diversity, density and predictability in space and their frequency, duration and intensity over time. However the importance of natural resources is clearly affected by cultural variability and by differential control of and access by socio-economic groups. Political control for example, can create false shortages or induce change where no apparent shortage exists. Trade on the other hand opens up the possibility of breaking through any constraints imposed by natural resource deficiencies and links growth

to population, technology and/or capital accumulation; such a relationship is not dependent upon the occurrence or non-occurrence of these resources, but on the level of conditions of production and therefore of the reproduction of social relations as well. In this sense, the ecosystem does not contain the economy any more than the economy contains the ecosystem. "Economy is a culturally mediated field of a human population's activity in which its members interact with their physical and social environment in the calculated attempt to acquire, directly or indirectly, a living."⁴ "Directly or indirectly", implies a contrast between subsistence/acquisitive activity involving production for consumption within a single unit (with an absence or minimum interunit exchange) and subsistence/acquisitive activity involving production both for consumption and for exchange within separate units (with regularized interunit exchange). Such a distinction is applicable to the study of economic activity at any level of socio-cultural integration, but it is especially relevant to the study of pre-industrial and/or "primitive" societies. The phrase "acquire .. a living" implies that the individual, as a member of a unit, comes into possession of material "wealth" to satisfy subsistence/acquisitive needs through his own productive activities within the prerequisites of his society's needs. "Calculated attempt" means that economic activity entails either a rational comparison of alternative courses of action or a rational readjustment of given means to obtain certain minimal ends, and is purposeful - its intended purposes being appropriation, transformation, exchange and utilization to attain the immediate goals of subsistence or acquisition. Rational, does not imply that individuals are making decisions in accordance with

X

any universally operative maximization principle, but simply that they are pursuing ends coherent among themselves and are employing means appropriate to the ends pursued. (Fig. 1) (Godelier 1972).

Production for exchange, or the production of exchange values, is thus specific to certain modes of production. While the production of use values is common to all forms of human society, production for exchange values is specific to production under capitalism. (Fig. 2) Marx, as we have seen, (Chapter 1), argued that each mode of production has its own laws of population; he did not mean (necessarily) rate of growth but population density and distribution generating dynamics of development that are influenced by factors internal and external to the sociocultural system. In fact, at the heart of the matter there is a whole complex of important theoretical issues. What emerge, are the questions and the diverse answers to the problems concerning the distinctive nature of economic formations in primitive societies, their differentiation from capitalist formations, the question of the very idea of "economy" in general, and the separation of the "economic" from the "non-economic" in social life. This generalization reflects the content of Lenin's position:⁵ "... in order to understand what is taking place it is necessary to know what questions are settled by the changes in strength. The question as to whether these changes are "purely" economic or non-economic (e.g. military) is a secondary one. which cannot in the least affect fundamental views on the latest epoch of capitalism". In essence, this statement helps us to qualify the problem; because the same concepts and theories used to analyse present capitalism are used to analyse any other economic formation or social relation, societies at different stages of evolution

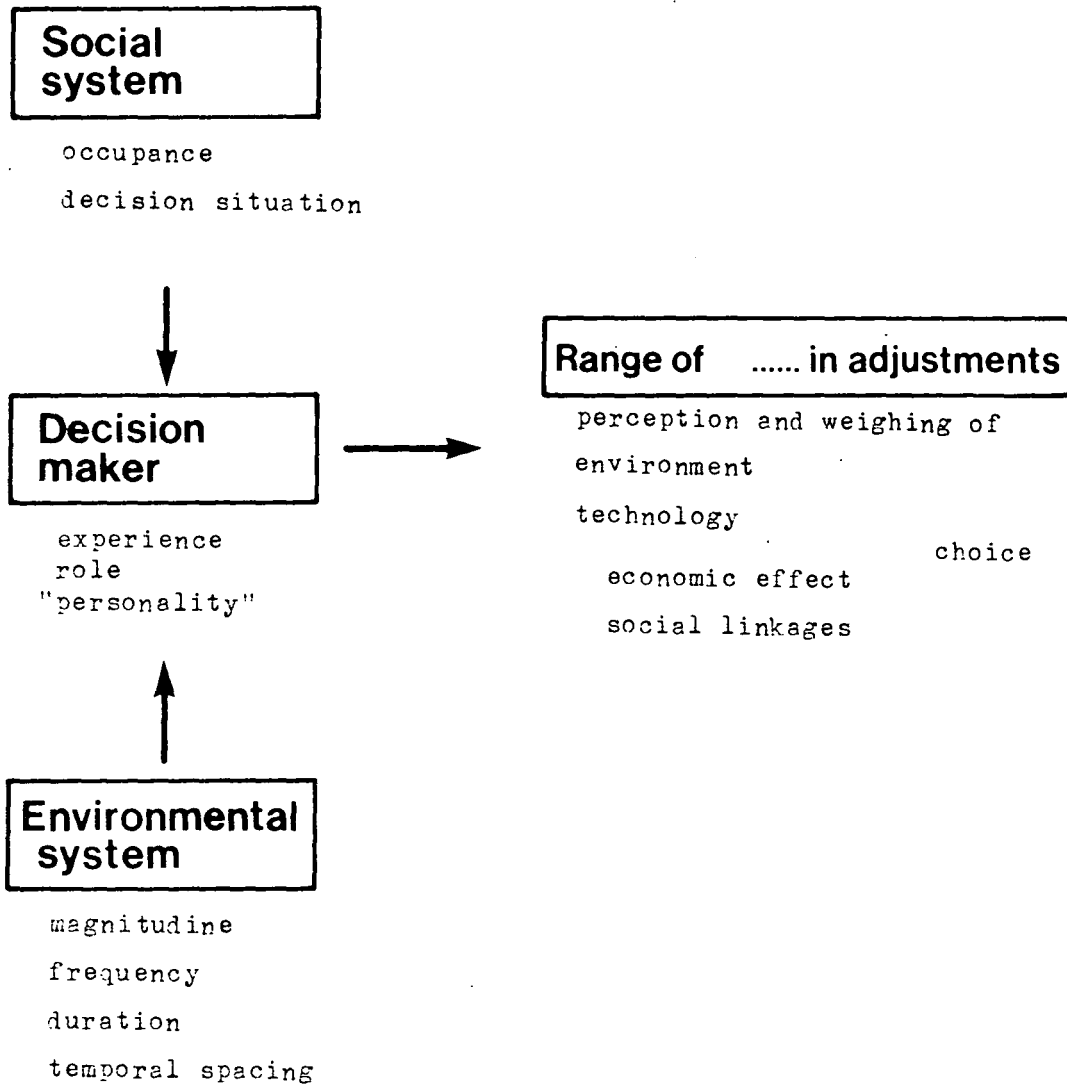


FIG. 4.1. A rough model of "decision"
(after R.T. Chorley, K. Home)

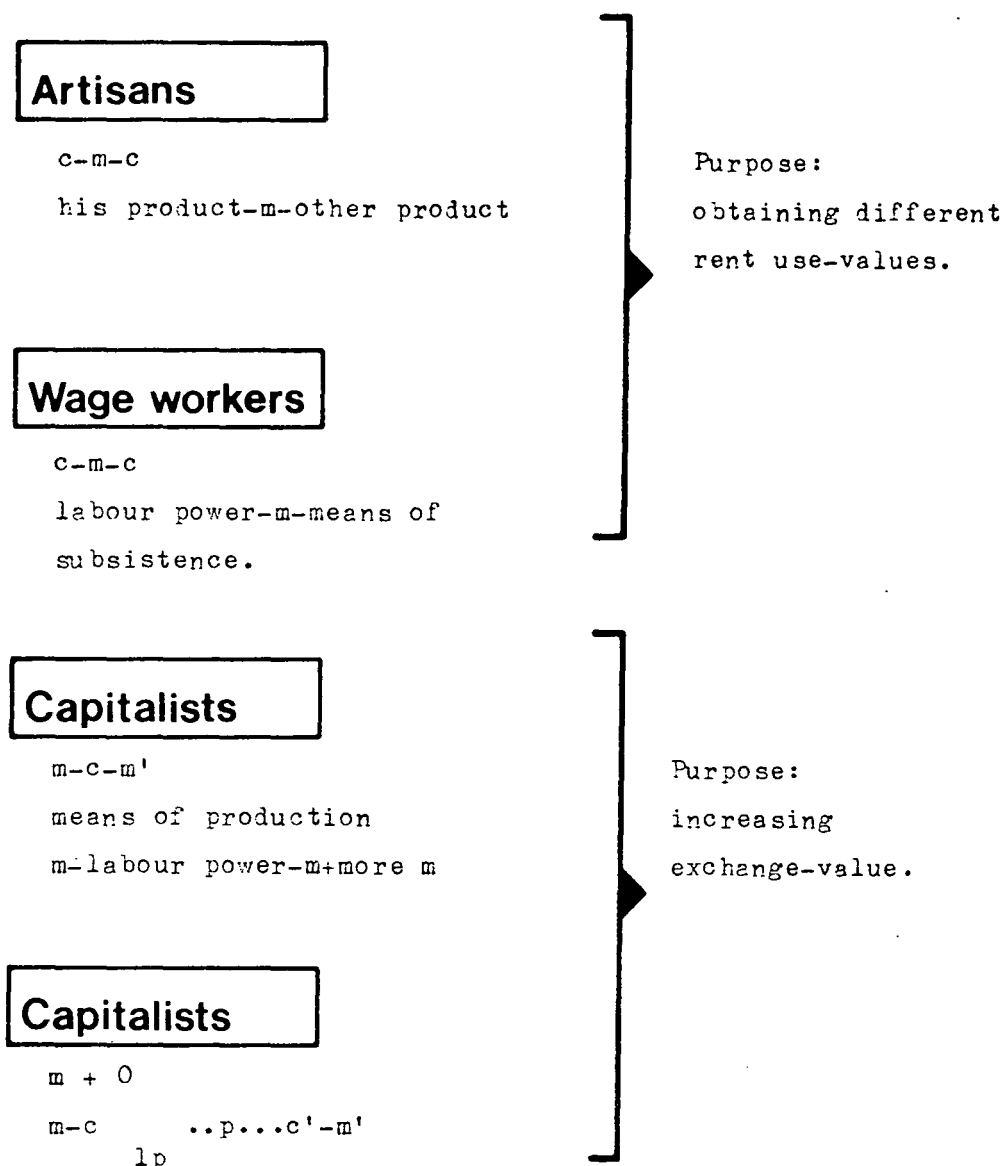


FIG. 4.2. The processes of exchange under simple commodity production (SCP) and capitalism (C) (after J. Harrison 1978).

Under the forms (SPC) artisans go to market with commodities (c) they have produced. They sell these for money (M) which they then spend on other commodities (c). They begin and end the process with commodities. The total prices of both sets of commodities are the same but the goods are qualitatively different. The purpose of exchange is the acquisition of different use values. For workers under capitalism, the process, though similar, does not begin with products they have made because these always belong to the capitalist for whom they work. Workers do not own means of production and so cannot work on their own account. Nevertheless, they do own a commodity. They sell their labour power and spend the wage on means of subsistence. The exchange values of their labour power and of the means of subsistence are the same. Again, money is only a means to an end. The point then is, under simple commodity production, the acquisition of different use values. The process is altogether different for the capitalist. It begins and ends with money. There is no

/continued ...

FIG. 4.2 (continued)

qualitative change only a quantitative one. He finishes with more money than he began (m' instead of m). The purpose is not the acquisition of different use values, but an increase in the amount of exchange value under his control. Means and ends are reversed to him.

The explanation of how the capitalist finishes up with more exchange value than he began with, lies in the fact that the exchanges he makes are separated (...) by the process of production (p). He spends his initial money capital on means and objects of labour ($m+o$) and labour power (lp). He then sets the labour power to work and, using his position of authority and control in the labour process, forces workers to perform surplus labour. The commodities they produce embody more value than those he bought and therefore sell for more money. The capitalist makes a profit. This profit has not been made in exchange - where everything has been bought and sold at value - but in production, where exploitation has taken place.

are treated as being basically identical; under such an apprehension of society, all notions and concepts are universal. Any kind of assets (tools, land etc..) are "capital"; any transfer of goods is "exchange" if not trade, any old man benefiting from collective work is converted into an entrepreneur and calculator of marginal returns and any kind of returns are interests whose rates are sometimes computed as being 100%;⁶ labour-value becomes an operative concept only when labour is a commodity; in a non-market economy labour-power and accordingly production and reproduction, although the potential basis of value, finds no way of actualization, and that is because under capitalism the existence of value reflects the impossibility of consciously adjusting production to demand under a regime of private property and competition. (Fig. 3) For Marxism, this principle represents and determines the value of production for the furthering of human existence generally, that is, real value from the standpoint of social reproduction; no particular object can have any real value in itself, and no relationship between an individual commodity (or array of commodities) and an individual "consumer" could be a means for determining intrinsic value. In considering "values" it must always be supposed that labour power is distributed in an optimal manner corresponding to the technical standards of the time. We must note that this labour power does not simply exist. Variations in labour power are determined by consumption - in the broadest sense of the term. An increase in the conceptual (cognitive) power of individuals which is the basis for increases in their productive potential, requires increases in the absolute level of consumption and the amount of "leisure". Such consumption and "leisure" represent a definite proportion of existing

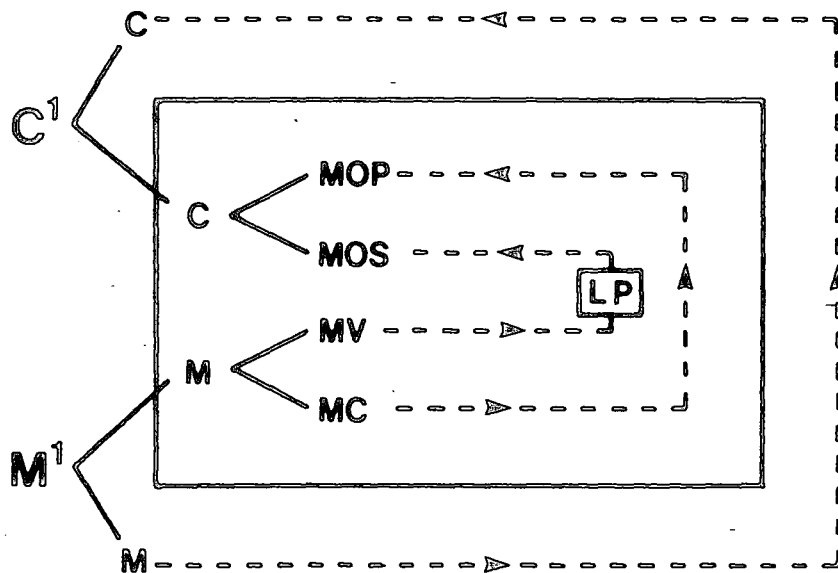


FIG. 4.3. A simplified diagram of the process of capitalist reproduction. Let us assume a system in simple reproduction in which all production takes one year, at the end of which capitalist and workers meet in the market-place to buy and sell. Capitalists enter the market with commodities C' and with Money M' . Workers, having consumed their wages during the previous period of production, enter the market with only their labour-power LP which they hope to sell afresh so as to be able to consume once again. On the basis of their investment plans for the coming year, capitalist invest money-capital M to purchase the elements for next year's production. Of this money, Mc represents constant-money-capital advanced for means of production MOP ; it therefore buys back a portion of the overall commodity product C' . The remaining portion of capitalist investment expenditures consists of variable-capital MV , which is used to purchase labour-power LP for next year's production. The workers in turn spend this money on their means of subsistence MOS , thus buying back a second portion of the available commodity-product C' . Finally capitalists must also buy a certain amount of goods for their own personal consumption. They therefore expend an amount of money-revenue m to buy back the remaining portion c of the total product C' . Fig. ... summarizes money flows in the overall process. It is evident from the above that the circuit of capital $M-C$, encompasses the purchase of the vast bulk of the social-commodity

/continued ...

FIG. 4.3 (continued)

product C': directly through the exchange Mc-MOP and indirectly, through the exchange M, LP-MOS. It follows that any transfer of value arising from price-value deviations of means of production MOP and workers' means of subsistence MOS remain internal to the circuit of capital: what one capitalist loses as capitalist-seller of MOP and MOS, another gains as capitalist-investor in MOP and LP. The remaining circulation to consider is that encompassed by the capitalist's own circuit of revenue m-c. Here too, what the sellers of commodity-capital lose in value through a price below direct price is gained by the capitalist in the form of a lower price for their articles of consumption.
(after A. Shaikh 1980)

production, in the sense of the total available productive labour-time of all labour power. The process of social production implies the making of instruments of labour and their use to make articles of consumption. That is why social production comprises two interrelated spheres: the means of production and the means of consumption. Now at various stages of social development the differentiation between these two spheres of production may be more or less pronounced, but they can always be brought out in social production depending on the time spent in the process of labour, on the natural form of the product, and of the specificities of its elements. The point of concern is to understand how social reproduction develops. As technological advances occur, production of the means of consumption can be increased only through an improvement in the techniques of production.⁷ To ensure continuity, there must be constant reproduction of the means of labour. When Marx in Capital repeatedly notes that the value of "things" (or commodities), the value embodied in them, is determined by the quantity of necessary labour power socially required for their production, he is assuming that the value of labour power has been measured, not upon a simple increase in population, which anyway is not the measure of successful social reproduction, but to a set of "nonlinear" determinate magnitudes of the entirety of labour power. In general these "countervailing" considerations represent a general necessity; increased material consumption and greater cognitive powers represent freedom. Labour power or, more generally, social-reproductive power, represents for Marx - and for all Marx's economics - the notion of true freedom, that is freedom comprehended as necessity through practice.⁸ As to whether this means an absolute increase in the number of simple

individuals, two points must be further elucidated: the notion of the magnitude of the human population is primarily a qualitative consideration, that is, the primary consideration for any society is the tendency ratio, which expresses the social-reproductive powers of individuals and of their entire society for that specific mode of human existence. The second consideration is the quantity of individuals of that power, which corresponds to the power of the society as a whole. That which is common among social organisms which relate to a socioeconomic formation is understandably not exhausted by their socioeconomic structure. But what unifies all these social organisms, is finally the presence in the basis of the same system of relations of production. With respect to that, productive forces are all and any of the means of production (and reproduction) of real life. It may be seen as a particular kind of production (hunter-gatherer, agricultural or industrial) but any such kind is already a certain mode of social co-operation and the application and development of a certain body of social knowledge. The relationship between the productive forces and the relations of production expresses the process of development of all social formations. The relations of production depend on the productive forces and are determined by them, while for their own part exerting an influence on the development of the latter. This influence pertains at two interdependent levels: where they correspond to the productive forces, they promote their development, and where they run in contradiction with these forces, they become "antithetical" to their development. That is why it is necessary for the relations of production to correspond to the nature and the level of development of the productive forces. A kind of correspondence characterizes, therefore, the dependence of the

relations of production on the development of the productive forces and vice versa. However, in this interaction of the two sides of production, each "relates" in a different way, with the productive forces being the driving force in this process. This correspondence expresses the dialectics of interaction between the productive forces and the relations of production, which take place on the basis of the development of the productive forces. The complexity of these processes explains why the system of concepts and of values has no direct relationship with the process of production. Marx envisages moments when the social system will accord with the technological system, but at other times it will enter into contradiction with it, leading to revolutionary changes.⁹

The concept of contradictions of a system was rarely used in anthropological literature. It has however been brought into prominence in the debate over modes of production. In the main there have been two ways in which the concept has been used, one which is concerned with the internal workings of a system and the other which rejects the idea of a bounded system and emphasises the importance of external factors. The work of Balibar for example ~~relates~~ relates to the former usage. He takes the Althusserian construct of mode of production with its economic, political and ideological instances, and its structure in dominance, with determination in the last instance by the economic, as the structure which has to be reproduced (Balibar 1970). While this formulation allows for empirical variation in how each level is reproduced, the potential for change is not contained within an account of the structure of the mode of production. Thus it can lead to the position that all modes exist to reproduce themselves. Balibar escapes this difficulty by identifying a source of

contradiction which could ultimately lead to the non-reproduction of the mode of production and thus to its transformation. In his account, this contradiction is contained entirely within the economic instance - in the differential development of the forces and relations of production rather than in the structures of the mode of production as a whole, and thus, he determines contradiction at a different conceptual level to that of reproduction. The actual field in which the resolution of contradiction leads to changes in the mode of production is that of social formation. While this concept is again at a different level of abstraction, it still refers to a kind of unity.

The obvious source of difficulty thus, in attempting to understand the contradictory movements of pre-capitalist socioeconomic formations, lies in the fact that the typical anthropologist/archaeologist knows no standpoint of analysis other than contemporary economic theory, that is capitalist economy and capitalist ideological views. He refuses to admit the notion that the same material basis might also be developed differently as the material basis for another composition, a noncapitalist society. The notion of value remains a merely speculative construct, unless the determination of such a valuation has the content of an actual practice a practical form of realization. If a capitalist society is seen as a closed system - an eternal arrangement of human affairs - the valuation attributed to objects (for example commodities) by the capitalist superstructure, the capitalist market, must appear as the only realization of value. Thus, capitalist economy is imposed as a "logical" system, equal to, if not altogether superior to, any laws of universal nature.¹⁰ The "superiority" of capitalism to previous forms of society - in terms of an evolutionary overview - is that the dialectical notion of

capitalist accumulation reflects the noetic principle in a certain way: the notion of the absolute increase of wealth by expanded forms of higher social productivities, and also the self-reflexive notion of wealth as the substance that has the quality of such positive self-reproduction. This is not something new. There is a long process of gestation from the twelfth through the seventeenth centuries of European mercantile capitalism, and until the emergence of bourgeois political economy in the last third of the nineteenth century, by which capitalism was determined to have such qualities.¹¹

Taking into account the above qualifications, there is a further comment to make: the most general contradiction of capitalism is that it is inherently incapable of "perfection" by virtue of its non-dialectical (that is alienated) form. The notion of individual capital in itself - the ideological basis for capitalist ideas of accumulation in general - is an empty construct which does not know universality, is unable to distinguish between absolute and relative surplus value, or exchange and use value, and therefore cannot systematically distinguish between productive and non-productive activities for the particular case of capital investment. This is characterized by the fact that the individual capitalists may each be pursuing what appears to each as the optimal course for increasing their absolute wealth, while in the aggregate they are reducing the absolute wealth of society as a whole, or generally destroying the material basis for maintaining present rates of capitalist production and accumulation. Capitalism, because of its particularist-interest nature, has no organic capacity to "learn" new behaviours (or to "comprehend" old ones) that might correct such errors (Markus, 1975). This feature provides the premise for the second major contradiction:

when a general rise in productivity has devaluated existing capitals, the capitalist necessarily passes on this actual or implicit devaluation as a charge against both absolute and relative surplus value, either causing an apparent tendency for the general rate of profit to decline, or avoiding this by recourse to an inflationary expansion of the monetary system. Either course of responsive actions leads to the same ultimate crisis-result, a breaking of the development of the productive forces, and a consequent slowing of the rate of expansion of absolute wealth-production (in current terms), while the rate of capitalist accumulation moves ahead towards the inevitably ensuing liquidity crisis and general depression. On both accounts the system is incapable of expanding the mass of capital in ways amenable to the productive reproduction of the actual working population as a whole. The most devastating irony of this is the fact that the dynamic disfunctions of the process outlined are determined by the effects of that very rising productivity of labour on which increases in capitalist absolute accumulation depends. The special result of this general contradiction is a third one. It is possible for capitalism to maintain the rate of profit and even to increase the short-term rate of relative accumulation of wealth by primitive accumulation - by means of the one-time measure of looting nature, existing populations, and even other capitalist sectors, thus depleting the future basis for even continuing such accumulation of new relative wealth.

We will see in the subsequent chapters how this "paradigmatic" procedure is taken as one of the main criteria for the analysis of other economic formations and employed to determine primitive socio-economic formations¹² (sometimes going as far back as the Palaeolithic)

where the productivity of labour is measured in terms of its "profitability" and related to "investment" and "market decision" (even in a "vulgar primitive" sense). Thus, political economy and accordingly economic anthropology, while an existent subject, becomes permeated with metaphysics. Since the mind of alienated man refuses to recognize the distinguishing features of political economy, features which are precisely dialectical in form, it must impute the notion of political economy to every imaginable society, from Robinson Crusoe to civilizations millions of years hence. Its motive to see all human existence as a vindication of the true religion of its present ideology and its way of interpreting the world, provides it with no contrary indications since that interpretation - reductionism, empiricism and related outlooks - is entirely consistent with its convictions.¹³ Unable either to identify the actual (dialectical) content of political economy or to recognize it as something which came into being, reductionism sees in it only an abstract metaphysical essence which can be readily imparted to any object at any time or place, provided that bourgeois ideology rests upon it. Thus, in general, political economy is the false consciousness of its subject matter, an ideological disguise for the actual practice of political economy and related subjects. Capitalism's human achievement in this sense is epitomized not only by the merciless destruction of "the idiocy of rural life" (K. Tribe 1978) or the distinctive inhumanity of feudal and early capitalist societies but by the dead end of the ancient commune as well.¹⁴

In order for the simplest form of human society to exist in terms of Marx's definition, its production must only produce the material conditions of life and means of production necessary for continued existence, but must also produce a social surplus. This

social surplus provides the means for continuation of society within a specific mode, and in most instances immediately creates those social formations and institutions which play a decisive role in bringing that form of society to an end. The determination of the objectified contradictions to which we referred earlier, does not lead to being out of an abstraction; it usually develops as a materialized form through a realization of social surplus. This division between the labour required for simple reproduction and the labour corresponding to social surplus is the simplest and most fundamental division of social labour in every society. Provided that we recognize that the (socio-economic) categories defined are thus determined in each case, and not necessarily empirically identical with their determinate values in other instances, it is possible to have a generally correct notion of them for capitalist society and, implicitly, an insight into the means of adducing similar kinds of determination for different societies - not simply parallel determinations, but determinations adduced from "empirical" evidence by the same general method. Accordingly, abstraction contains an empirical content. This content cannot be presumed to exist independently of the theory even if the relationships upon which it is based can be presumed to exist and appear independent of the individual. The simplest fact is open to varying interpretations according to the theory which is interpreted and incorporated. The empirical content of a theory, then cannot be considered, either to be a neutral starting point or to be the closing moment of verification, or both. It too will have a relationship to the abstraction within the theory and although it can be drawn from different sources, it can have its origin in the society under consideration. These concepts all have to be considered at different levels.¹⁵ It could be argued that

contemporary capitalism is still best understood if the market mechanism worked to create full employment equilibrium as suggested by the theory of competitive equilibrium; whether this is correct or not, the point is that contemporary capitalism is explained as if it could be identified with an earlier stage of development.¹⁶ That this is possible follows from the existence of different societies, of relations which appear to be the same. This involves the use of general concepts that are applicable to all societies such as labour, production, technology or consumption, but the question is how this is to be done. An answer is suggested by raising two solutions at two polar extremes. The first is to employ general concepts only. Then the result will be to create an analysis characterizing every society and, because it has no specificity, it will explain none. It would be as if natural laws could explain social laws. At the other extreme, the empirical material incorporated could be so detailed that the analysis would be specific to a fleeting moment of time alone. Thus it is necessary to demonstrate that the theory reproduces in thought relationships which conform to the period of history to which they are applied. Money is money, but is money under feudalism identical to money under capitalism? This is not the same thing as saying that the concepts have no relation to reality. The model of perfect competition is clearly inspired by the wish to examine the properties of an economy with many producers and consumers and the more or less free flow of resources between sectors by the mechanisms of exchange. Model here is the operative word, since it takes a system of thought and imposes it upon the relations to be studied, without justifying the correspondence between the movements and relations ~~with~~ the model to those being examined.¹⁷ It is in this way, this formal economic

theory was imposed as a method for analysis of primitive economics and it is for this reason that it is impossible to see one's way to the formulation or attempted solution of these problems, without taking into account that "contemporary economic theory" whose applicability to primitive societies is in dispute.

The dominant trend is of course centered around Marginalism. Methodologically, the major characteristic of marginalism and of the schools of thought that comprise much of modern economics besides is its attempt to free itself from the necessity of an abstraction that assigns a different status to different concepts within the theory. Central to this endeavour is the division of the economy from the rest of the society so that economy can be studied in isolation from social relations in general, just as economics becomes a separate discipline from other social sciences - history and philosophy. What modern economics has done is to avoid the question of the relationship between economy and society.

What marginalist theory has done is to introduce into economic theory a basic, fundamental category: that of the scarcity of means, using the notion of marginal quantities (marginal utility, products, income etc.,) Historically the starting point of marginalism was the contention that goods (objects, services) are never sufficient for the full satisfaction of human needs. In their view this scarcity necessitates the existence of economic theory. Goods that are available in unlimited quantity are not subject to economic considerations. Only when means are insufficient, does the need arise for their economy, and hence for economics, which consists of the allocation of scarce means among alternative human needs. It is understood that such allocation can take most diverse forms, as it is of the very

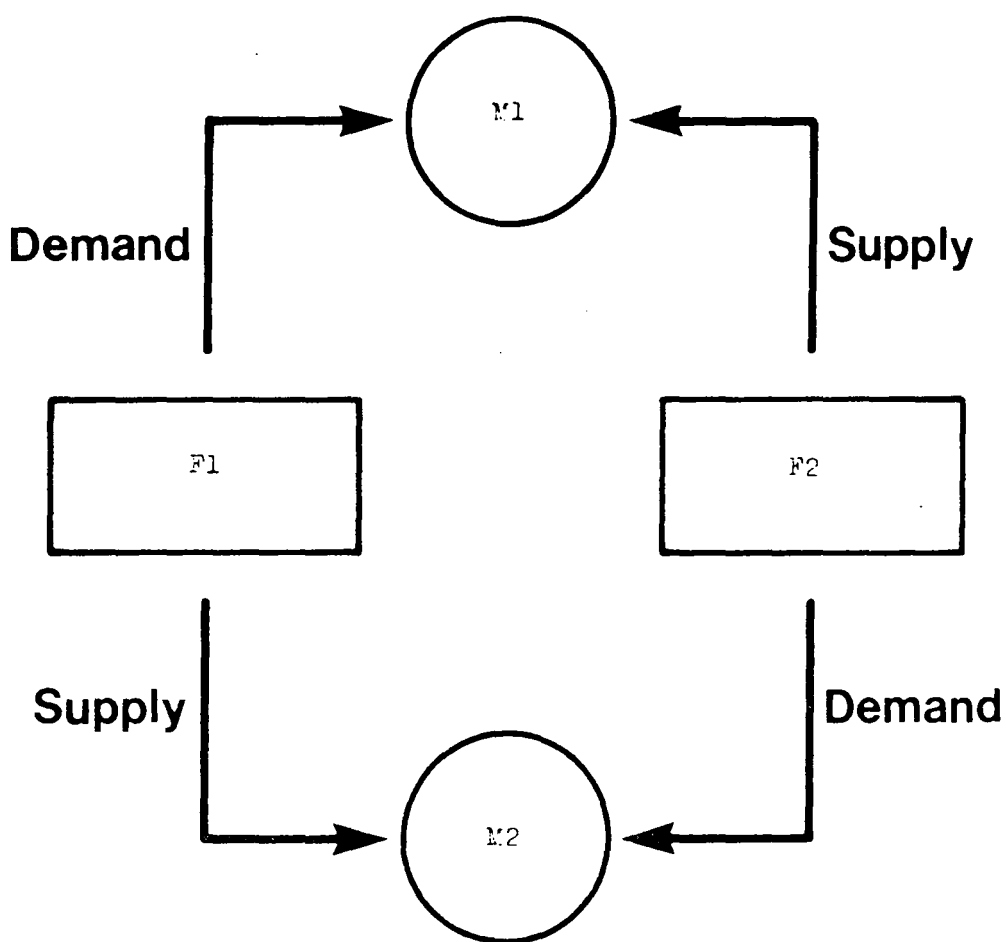


FIG. 4.4. Neoclassical economics. Samuelson's solution to the basic economic problems of what to produce, how and to whom.

M1 = process on goods, markets. M2 = process on factor markets

F1 = consumer, public, imports. F2 = production, business layout.

essence of man to strive to attain the greatest satisfaction of his needs, compatible with given circumstances. Hence he is faced with the task of calculating just which particular allocation will gain him "maximization". Moving from consumption to production, marginalism speaks of the scarcity of the resources. The main problem again, is the question of the allocation of scarce resources amongst alternative ends.¹⁸ As man always strives to use all the resources available to him with the greatest effectiveness, so as to attain maximal returns in given circumstances, careful calculation is essential. Given that picture, man appears as a being who by his very nature rationally calculates "maximization". And the economic theory which thus conveys the essence of man is the theory of rational choice, and of the particular allocation of means amongst alternative ends.

Thus Samuelson wrote:¹⁹ "Economics is the study of how men and society choose, with or without the use of money, to employ scarce productive resources to produce various commodities over time and distribute them for consumption, now and in the future, among various people and groups in society." (Fig. 4) This is "obvious" for the marginalist aspect of reality reflects a relation of man to nature, but under a distinctive form of production, capitalism, the principles of which are universal and can explain any economic system. In this manner, facts which contra positivism can only be interpreted within a theoretical-historical framework, enter merely for the purposes of a "verification" and lose even their empirical content, or at least they create a distorted connection between facts and explanation. This is certainly true for the principle of "scarcity", expressing not the relation of man to nature but a specific kind of economic link. However natural the concept of the

ever-present divergence between human needs and their satisfaction may seem, it is hard to understand how given limited means "unlimited" needs emerged and moreover what kind of general deployment of limited means is incorporated. as, after all, material goods are basically "inherently" specific: they can only be used to satisfy well-defined needs (food can only satisfy hunger, clothing to wear, and so on).²⁰

Everything seems to be explained if we enter into the sphere of the capitalist market, which supplies a vast quantity of diverse products and thereby also forms a vast quantity of diverse needs. Capitalist society is a mode of production in which the reproduction of the structure of society and society itself requires the circulation of the products of labour as commodities (needs) that not only are exchangeable but must be exchanged. Thus the welfare of individuals is brought into a social equivalence through an exchange that equates marginal utilities to each other. That social equivalence is established from the individual propensities and there is no reaction from it back upon them. Changes in the marginal propensities of any individual are exogenous and can have the effect of transforming every equivalence that has been established, even in perverse directions, without any other individual propensity at all, merely reflecting a predetermined correspondence.

What all these these theories fail to realise is simply that the "factors" they are dealing with are socio-economical as well as ecological and that any kind of palaeoeconomic approach must take into consideration both dimensions, viewing the basic necessities of existence in terms of their "appropriation" as a whole. To avoid their articulation in setting the relationship between population

and resources is to reject the entire evolutionary process, its corresponding transformations, qualitative and quantitative, with the social historical origins of production and the ecological components of their reproduction.

4.2 Economics and Demography

If we compare the basic forms of society there can be no doubt that between economy and population there does exist a definite relationship which combines the features and properties of all these forms with a special tendency for "assimilation", at a specific moment of their development, of the diverse, multiple and distinct processes which concern the conditions of their production and reproduction - that is of their proper appearance, evolution and existence.

In this sense, it is clear that there can be no theory of demography "in general" since demography (defined in the double aspect suggested above) has a history whose determination is clearly situated outside demographic evaluations alone, although it involves them. To think the concept of demography is to think the concept of the unity of its conditions: the economic processes involved in the dynamics of its modification. In this case the "unity" of the notion of production and reproduction is that any society must produce and reproduce certain elements of value in order for the society to continue. Although the meanings of production and reproduction have areas of overlap two distinctions must be emphasised. By production is understood the basic "economic" attention and meaning given to acts of forming, creating something new, with the transformations man imposes on natural materials in order to make use-
 valueless. Reproduction refers to the selection and use of things given to

the elaboration, renewal and continuation of "entities" previously reproduced within each specific mode of production, interrelated with factors "external" to it and influenced or even-totally transformed by them. Demographic structures are included within all these elements. Social relations, kinship relations, religious and other practices penetrate the dynamics of human populations' biological reproduction, and reflect their unevenness and fluctuations - based, at different levels of complexity, on the relations and forces of production specific and distinctive to each economic formation.

The concern then is which way these processes and elements are regenerated through time and under what conditions. What makes these elements important is that the decay, loss or the increase of any of them is not left to chance or nature. The physical processes of fertility/mortality and growth are culturally and economically elaborated to the degree that considerable amounts of energy, time and attention are expended in efforts to avert and/or transform the effects of deterioration and to facilitate and foster the effects of population patterns as well as the production of material resources. Whatever the cultural manifestations of these productive/reproductive activities may be, the process is not automatic or habitual. Even in these societies where large sectors are organized differently, with varying degrees of elaboration to the running down and the building up of each kind of valued elements, the disproportion that exists in terms of population interrelationships and/or articulation within the whole - therefore inequality in these relationships - may cause a system to be minimally integrated in these processes or opposed to it: in both cases it may have to labour over and give specific responses to productive/reproductive areas as evidence

throughout its effectivity. The fact that each of these specific responses is relatively "autonomous" does not make so many domains independent of the whole. In other words the relative "autonomy" and independence is based on a certain type of articulation in the whole and therefore a certain type of integration and dependence with respect to the base of the whole, that is, its economic mode of existence. Of special interest here will be the interplay between human life cycles and the life trajectories of material and immaterial resources - concerning the processes of production/reproduction which take place in the face of contradictory motion of loss and decay. From this perspective all human societies are necessarily involved in three interrelated productions: the production of the means of production, the production of the means of subsistence and the production of labour-power on a daily and a generational basis. These three productions may be organized in a variety of ways. In each case the problem is to identify their composition in and derivation from particular modes of production and into specific social formations. Moreover, whereas a mode of production is defined as a particular set of productive forces in combination with and in - latent or manifest - contradiction to, a specific "ensemble" of relations of production, the point is that this forces/relations combination must be conceptualized for all three productions. Concerning the first two productions the point may be non-controversial, but it is not for the third. Yet, it can be expected that if one takes labour-power as a productive force in all modes of production, the question of the specific relations within which it is produced and reproduced must be addressed. And if one rejects all naturalistic interpretations, then one must analyse those historically specific

socio-economic relations which regulate fertility - the infrastructure of the generational reproduction of labour-power. Although the importance of demand for labour in determining population growth and distribution is generally now recognized, the tendency of demographers is to ignore changes in the demand for labour when considering population problems. All the conventional models²¹ postulate a direct connection between population changes and changes in factor supplies and/or final demands. Most of these models are reflective of the original Malthusian ideas and emerged (as has been said earlier) under the impact of classical and neo-classical economic theories. On the other hand, because means of subsistence and demand for labour must be distinguished and in neo-classical thought this distinction was not made clear (when and if recognized) the analysis of population growth was conducted within the framework of a "natural" rather than an institutional context, i.e., in terms of the ratio of numbers to physical resources - which leads ultimately to the different ecological models and to most widely accepted (although not without controversy) carrying-capacity model.²²

There are two variables to the problem: first, in all societies consideration must be given to the overall relation between the "schedule" of labour-power's consumption in production and its demographic replacement (both for the short and long-run phenomena) through the medium of its small domestic groups (as well). The way in which this relation is regulated (or upset) gives an important insight into the dynamics of the society as a whole; moreover it offers important degrees of freedom for further explanations, de-emphasizing the consequences of climate, natural fertility etc., consequences which set upper limits on population issues. Secondly,

the position of women in any society is closely bound up with the gender construct of wife/motherhood and women's subordination, in a variety of forms. At a general level this concern raises the issue of gender difference in itself: why it is culturally elaborated and developed and how does a particular society deal socially with this fact? Since this is not only a social question by definition but corresponds to the different categories of material production and reproduction, it requires an historically specific explanation of the ways in which women and men are bound in social relationships. Women and men are empirically defined beings; similarly many of the explanatory terms used in this type of discussion, (such as marriage, family, etc.) are empirical categories in which are contained a variety of different relationships. For Marx, (and we quote this example only to bring the issue into better relief), "individuals producing in society - hence socially determined, individual production - is, of course the point of departure." In Grunrisse we find dozens of such statements, while earlier in The German Ideology Marx defines that in research (although not in the presentation of results) it is individuals who are the point of departure, adding that he means individuals who live and act in society. He says so because they are concrete reality, and he does not hesitate to accept (as any empiricist would do) the concrete as the point of departure in research. Marx, when discussing the method of political economy, considers population (classes etc.) as the real starting-point; he is not afraid of adopting such realities, he is afraid of transforming these concretes into abstractions if their complex nature is not recognised,²³ if the methodologically significant truth which abstracts, localising its reality because it is the concentration of

many determinations, and hence unity of the diverse". is not recognised.
(Grundrisse)

What Marx explains referring to the category "population" is that it becomes an abstraction if we do not take into consideration the fact that population (and not the concept of population as structuralists state²⁴) consists of "real components", human beings with all their abilities, attitudes, classes, labour etc.. In the Marxist theory what is termed the base includes the forces and relations of production, and human beings are not just the active force of production relations, but also an element of the forces of production, which includes raw materials, instruments of production and the appropriate abilities to use them.

Now considering a third variable related to the first two discussed above, that is population size and growth, we have to pose the question: what then constitutes the socio-economic relations of labour-power's reproduction? Here we have to identify the question of the family. Definitions of the family, reflecting ambiguities in colloquial usage, have oscillated between reference to kinship (relations by blood and marriage) and co-habiting kin (related persons living together under the same "roof"). The problem, was one of multiple and shifting referents with household and family often being used interchangeably. As a result of a certain critique, it is now common to uphold a household-family distinction, which settles one part of the problem but leaves another one, that is, family still covers both the kin co-residence group and more broad kinship filiation.²⁵ A further distinction proposed is between household, family and kinship, where the intermediate term - the family - is assigned the restricted meaning of the core kin group which is normally co-resident through

various phases of the domestic cycle. It is recognized that household, family, kin relations may organize more than the third production of labour-power outlined above. In many modes, they are integral to the production of the means of production and subsistence as well. In many cases they organize the primary production of labour-power, though they may not do so exclusively, as under capitalism, where other systems of organization play the major role.

Under capitalist private ownership the means of production assume the form of capital, a means of exploiting hired labour. As a consequence a population's performance changes. Given the problems surrounding "natural loss" and the equally perverse changes caused by human intervention, the process of production constitutes an intrinsic attempt to identify the different reproductive factors in a certain socio-economic environment. Human action may take place within a framework of social structures but these structures are themselves created by human action within and on the social world. In prehistoric societies the means of production were objects of social ownership and they served to produce items for auto-consumption; these means, cannot be the source of surplus-value, since they do not produce any new value, but merely transfer their own value to the newly created product. Therefore they cannot be exploitative.

In the course of production the value of the means of production consumed is transferred by concrete labour to the product made, while abstract labour is the source of value of commodities. The dominant relations of production determine (each time) the social character of living labour and its division into necessary labour and surplus labour. Historically, the division of labour and respectively of the product ~~into~~ into two parts - necessary and surplus - became

possible when the level of labour productivity made it possible to produce more material benefits than the amount really needed for maintaining the existence of a population (and its units). The quantity of labour commanded is not to be determined by the ratio of absolute ecological conditions, but by the way these conditions are exploited. ²⁶ To maintain that there is one and unchangeable amount of "pressure" that always enters as a component part of demographic identification is not to explain why we should believe this. If human population dynamics were to be determined by an absolute ratio of environmental conditions purely in terms of trophic energetics, then it would no longer be properly called human.

The evidence does not support the theory of a "common" pattern of demographic evolution. Yet, population growth is usually analyzed as a biological phenomenon deriving rather from natural objectives than from the characteristics of particular productive relations, which demand different degree of cooperation between producers or between producers and organic resources. It is under this principle of biological/ecological derivation that economic "mobility", both on the micro-macro level has been "blocked out" from demographic research and explanation, leading to a blind empiricism concerning populations' static, dynamic and even structured or distributional variables. Such a point becomes particularly clear in societies where subsistence is obtained through direct appropriation of nature, as for hunter-gatherers. The purpose is to establish a seasonal rota with hunters moving from one site to the next performing subsistence activities at each one. And the result is the integration of primitive communities into one system of "tribal activity" with a considerable element of a simple/mobile "non-economic" adaptive mechanism.

The concept appears to have gained much of its popularity over the last years as a result of Birdsell's study of the relationship between rainfall and Australian aboriginal population density and an earlier commentary by Bartholomew and Birdsell which argued for the importance of searching for limiting factors in accounting for H/G population densities: "... it is generally agreed that under ordinary circumstances in prehistory it is difficult to use archaeological evidence to predict population numbers or densities among hunting and gathering peoples. Estimates can be made for the number of people occupying well-excavated sites under certain conditions, but it is more difficult to project such data into generalized estimates for regional populations. Therefore, if it can be shown that simple equation can be developed to space numerically stable units of populations in bounded societies on their land, it should be possible, given palaeoclimatological data, to distribute hunters both numerically, and as densities, over prehistoric terrains..."

The simplest predictive equation covering this relationship is an exponential one in which the tribal area is equal to the medium annual rainfall raised to a negative power and multiplied by a constant. The question arises as to whether such techniques for prehistoric populations censusing can be evaluative of their demographic reality. The nearly identical arrangements of these determinations are not independent nor is their relationship random. They focus on perpetuating ideas of a mechanistic interpretation of society, changing as a result of a simple correspondence - furthermore emphasizing equilibrium rather than change. Birdsell argues: "...It does not seem rash under those circumstances to hope that the coefficient of correlation between the area of tribal domain and

the complex of environmental factors may rise as high as 0.98. It should be anticipated that the same level of environmental determinism probably operated among generalized hunters and gatherers elsewhere on the earth both in the present day and in prehistory." The above model, alongside the carrying capacity, population pressure and different kinds of calorific estimates models, apart from the fact that they tend to monopolize a particular human populations branch, preventing their entry into the "facts" of an economic activity, by controlling relevant areas of practice and restricting their intervention into the process of production/reproduction, tend to preserve a rough equality between groups, destroying in this way the specific character of their distributional variation and exploitation strategies.²⁷ Perhaps group movements may follow typical annual patterns and reflect seasonal shifts from one resource to another, but they do not constitute a real change of the populations' size or structure per se. Such a process would not ordinarily be started in the absence of some inter-regulating "sectors" imposing productivity quotas for foodstuffs that will be consumed and where the compensation given does not closely respond to the amount produced. To sum up, the "meaning of economy may be found in a system of repeated analogies (as for example the model we have in Fig. 5) but which conflict with or override basic adaptational directives. The literature concerned offers a well-documented list of peoples living in identical environments and yet practising different economic or settlement strategies (Fig. 6), like for example, the Mbuti pygmies, the Yanomamo of South America or the Tiwi of North Australia. In addition, if we consider prehistoric Europe as an example the major changes are those that man has induced himself, so altering the

conditions for his own existence.

Using the outlines of a model of reproduction rather than the limited features inherent in models based on norms of adaptation the ecological perspective remains integrated with a societal perspective in which the restraints and potentialities of each reproductive level in the system may be charted and measured against each other; in this way a transactional orientation becomes incorporated into the demographical framework so that population and environment are not perceived as dualities or as opposition. Life cycles of individuals in this bio-social dimension, in articulation with the life trajectories of objects of exchange, distribution, consumption, in their natural and symbolic rates of productivity and dissipation establish the temporal dimension around which a particular socio-demographic system is structured. Within and against the restraints of these dimensions populations' international strategies are developing, so that demographic phases operate within social relations, economic determinants and ecological boundaries in the context of the demands and the possibilities for their productive/reproductive concern.

4.3 Problems of Economic Relations in Hunting-Gathering Societies

In depicting an economic system that is expanding continuously over time, it is essential to recognize the need to distinguish between the factors responsible for the existence of production/reproduction in general, and those responsible for the cyclical or differential movements around that trend line - even if at least one of the factors involved (like kinship structure, natural conditions, technological level etc.) is - or appears to remain - the same.

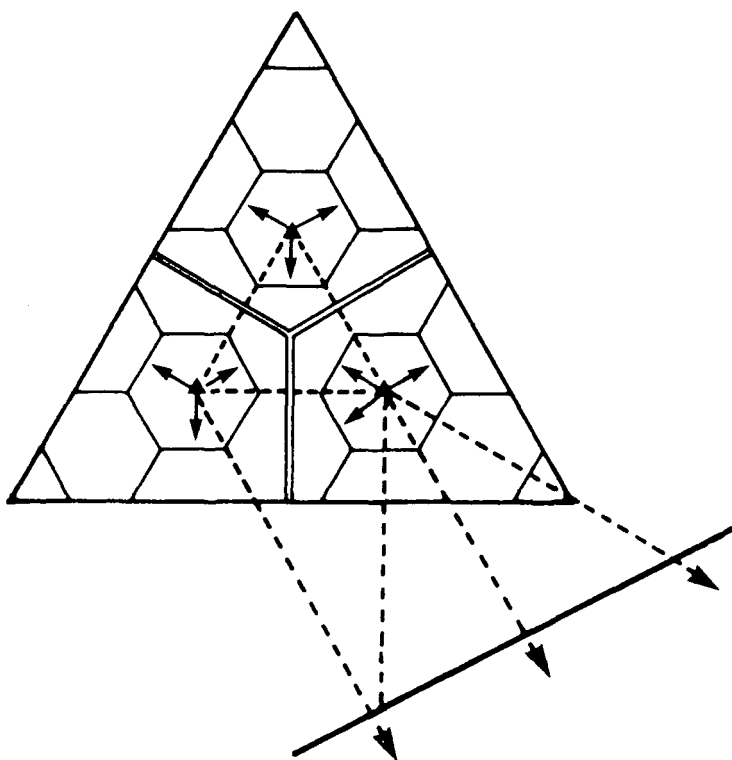


FIG. 4.5. A model for the development of regional centres, which they may also act as redistributive centres to surrounding areas (adapted from Hodder-Orton 1975)

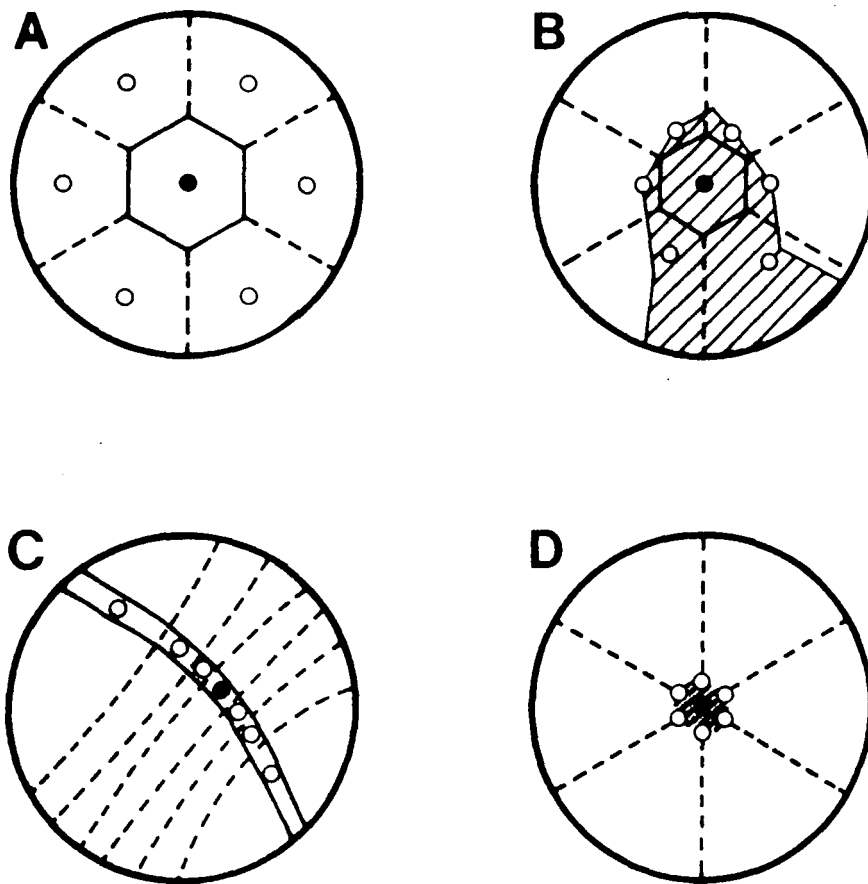


FIG. 4.6. Settlement patterns associated with an increasing localized resource (dashed areas)
(Source: P. Haggett 1968)

A number of points which arise from this account need clarification. First among these is the concept of kinship. Both the complex of symbol and the complexities of kinship were used as convenient schema of interpretation in order to avoid the real questions, bringing together under one heading systems whose positions and functions are not the same in every socioeconomic formation; it is of course, one of the functions within the system of a group, not the predominant ^{one} one. Some of these systems organize social life as a whole, while others affect only some sectors, and these again differ widely. Particularly for hunter-gatherer societies in which a complex kinship system exists alongside a sexual division of labour, or for hunter-gatherer societies where no kinship system exists but an extremely stable division of labour does. Even if kinship is considered (as often happens) the basis of social organization in so-called "traditional" or "primitive" or "band" societies, we have to pose the problem of the way in which a relatively autonomous position is determined by the relations of production and reproduction quite independent of all genetic hypotheses. To give kinship structure a decisive value for the understanding of primitive society, kinship must be understood as more than a simple combination of genetic relationships and attitudes, it must be considered in a formal as much as in a functional aspect; at this point the unity of the entity "kinship" can no longer be thought of as given and has to be proved. What follows from this in "practice" is the establishing of the actual relationships which exist between the spheres of kinship and the economy.

When kinship relations can operate as relations of production they do so not from outside production as determinants of the form of social groups in production but from within, assuming the re-orientation of

of labour, the means of production and products. We have already seen that individuals and groups making up a given society always obtain access to the resources of nature and appropriate them within and through a social form of use of a territory, which form legitimizes this access and this appropriation. In all societies the forms of "ownership" of its territory take the form of social relations, in whatever form they may happen to take, and they function as systems of production, as social relations of production.

Godelier²⁸ argues that the labour process takes place at the level of the band, which is the unit of production and consumption. But this fact does not explain why it should be that the band has no exclusive rights to the territory which it appropriates. On the contrary it is the relationship(s) between bands, functioning in the form of kinship relations, which "determine" the formal appropriation of the collectively-owned means of production; these relations therefore constitute the basic framework for problems concerning access to resources both at the centre and at the periphery are settled (as for example conflict and alliances) since they determine, before the immediate process of production, the essential pre-condition for production i.e. access to territory.²⁹

Looking at the Australian aborigines' use of their resources and land through a period of time, we find that it was legitimate for any individual belonging to one of the descent groups forming his tribe (half, section or sub-section) to hunt over all the territory belonging to his kinship group. In case of need, he was also permitted to hunt on the land of his allies, that is land belonging to his mother's section or to the section that had given him a wife in exchange for one of his classificatory or real sisters. He has a right of access, control, usage and transmission of various fractions of a

tribal territory were attached to "kinship" groups.

Ownership of nature took the form of an attribute of kinship relations because these functioned as a social framework (or even base according to others) for production. Things are in fact much more complex and this complexity sheds light on the controversy concerning the above notion. Radcliffe-Brown claimed that each patriclan had an exclusive right over its territory and that each local band was a patrilineal group jointly exploiting the territory of its ancestors. But accumulated work since has shown that local Australian bands were made up of members of several patriclans, exploiting several territories, their own and those of certain of their allies. What seems to have happened was that each kinship group functioned as the unit of abstract appropriation of territory, but did not function as a direct unit of concrete appropriation. The units of direct production and consumption were the local bands, consisting of a restricted number of families and individuals. Several kinship groups came together for the purpose of exploiting the resources of several territories. Descent relations thus may have served as a basis for abstract and juridical appropriation of resources, whereas relations of alliance may have served as a basis for concrete appropriation and for everyday cooperation. Thus both aspects of kinship relations served as a social framework for production. Again this is a point of importance, for we are dealing here with kinship relations which, in all societies, are relations regulating marriage, descent, place of residence, and demographic structure. In this respect, if there is any distinction between infrastructure and superstructure, economics and kinship or rituals, it is a distinction between functions and not between institutions. These institutions may function as both economic

and kinship.³⁰ In these Australian societies we find kinship systems functioning both as infra- and superstructure. The majority of anthropologists, when faced by a multifunctional institution, whether it be kinship, as in the case of Australian section systems, or of acephalous segmentary societies like the Nuer or the Tiv, infer that it is because of its multifunctional character that this institution dominates the structure of the whole society and the logic of its reproduction. For some it is kinship, for others politics or religion, which is the determinant instance of the working of the whole of the society and the cause of its internal logic. At this level, all these theoretical opinions find themselves in opposition to Marx's position that it is the economic infrastructure of a society which in the last analysis determines the inner logic of its working and of the evolution of the various types of society. We have seen what Marx meant by economic infrastructure; on this definition there is no theoretical reason for prejudging the nature of the social relations that in any particular society will assure the programming and control, nor for prejudging the number of functions a social structure can assume. Once again we should note that with the development of exchange and the rise of market economy, kinship as the main expression of primitive social organization loses its "actuality"; it is transformed here into an ideology whose "raison d'etre" is not so much to express the growth and organization of the society as to justify and support a domination imposed from outside. We could relate this ideology to the "new" rules of kinship which develop in the aristocratic lineages and which are different because they obey political rather than economic constraints.³¹ When kinship reaches a religious dimension, it may gain enough strength to be considered as the basic justification

for domination and exploitation. The situation is inverted: people instead of being kin and interdependents because of the relations of production they are in, are integrated into such relations because of an alleged ideological-kin relation. Hence the emphasis on "blood" relationships in some cases, or on religion in others. The change can be related to the new relations of production arising from the transformation of the product into a merchandise. While the product, in the self-sustaining economy, is not an object of appropriation (it cannot be alienated but only advanced) it becomes property once it is traded. This reorganization of "economic space" imposed a new way of exploiting nature, people's labour force, their demographic mobility and structure (cutting off whole tribes from their traditional environments) and changing "by force" the local character of forms of social organization and production.

Of all aspects of Aboriginal society economic pursuits and the socio-economic units involved are the most difficult to deal with. In part this is due to the early, shattering effects of the colonial experience on Aboriginal life;³² even when the cultures were not totally disrupted, economic and population factors deriving from the impact of colonialism have continuously brought about demographic displacement and a marked decline in traditional modes of economic life.

In most instances peoples with a gatherer-hunter heritage have not lived solely as gatherer-hunters for a long time. Around the world, the colonial expansion of European nations has resulted in profound transformations in gathering-hunting societies. European colonialism was not, however, the only source of such transformation.³³

After the ~~19th~~ 19th century course of history over the past 15,000 years of ~~the~~

more has been one of transformation from gathering-hunting to agricultural society. In most cases the adoption of agriculture spread peacefully from areas where the exigencies of geography and human society first made sedentism preferable to mobility,³⁴ and domestication based on accumulated knowledge of plant and animal life, a viable adjunct to gathering and hunting. In some cases, however, foraging people were harassed by agricultural peoples. In other cases foraging people entered into long-term exchange relations with settled neighbours. A major problem is posed by the fact that the lives of recent foraging peoples are inseparable from their relations with systems of predatory expansion. In order to resolve debates concerning their past and present social forms, it is necessary first to locate a people being studied in its full historical and socio-economic context, and second to agree on what constitutes essential data for settling a debated issue, before assuming that a particular socio-cultural pattern directly reflects the necessities and constraints of gathering-hunting economy in a specific ecological setting. Even very early reports on a culture cannot be taken at face value but have to be appraised; the very fact that written records of a gathering-hunting people are available means that the people have already become involved in some way with economic and/or political relations with a market society. Furthermore, such records are coloured by the prejudices of the particular people who wrote them, or distorted by the fact that the representatives of different groups best known, to some explorer, missionary or trader were usually those who had broken with their kinsfolk and attached themselves to the outsiders.

...that so the sense of kinship then the confusion is

relation to the problem of discrepancy between "ideology" and actual behaviour is basically a confusion between "natives'" and 'anthropologists' categories and concepts. The core of the confusion is not so much the interpretation of empirical data as such, or the disagreement about the definition of the concepts, as a failure to realize that a concept which had been defined in a specific way to cope with problems derived from a certain theoretical framework is not suitable for coping with problems formulated outside this framework. In other words, the core of the confusion is the failure to realize that a concept which might have its origin in a certain ethnography is not elevated to the status of an analytical concept because of its capacity to provide a kind of "metalanguage" by which a range of ethnographic data can be adequately described, but because it enables the analyst to organize his ethnographic data in such a way that he can accommodate them within his theoretical model. In deciding on whether the natives conceptualize their groups in terms of relations of descent or kinship the "natives" own categories and the "anthropologist's" analytical categories might quite simply not have been clearly distinguished. The problem could have been formulated in this way only because of the failure to realize that a concept of descent as a principle of recruitment into any definition of descent groups has not some universal heuristic value but is defined in this way in the interest of protecting a typology of a certain system and of the model of a segment as a physically distinct entity.³⁵

Describing the composition of local groups in terms of his own analytical categories is thought to enable the anthropologist to establish what these groups represent in the world of the objective fact (regardless of contradistinction to whatever the natives might

subjectively take them for), thus ultimately distinguishing categories which have ontological status only within the reality which he has himself defined.

If this much is conceded, it is clear that the dispute over the meanings of kinship terms has been misconceived from the outset. The real problem is not what kinship terms mean but the nature of the relations among the genealogical designata and significata of certain words and between those and any other designata those words may have. Some have persisted in describing the words in question as kinship terms, even though they maintain that these words do not designate kin categories. There are many reasons to suppose that this assumption is false, certainly about kinship terms, which may designate genealogically defined categories (thus the description of them as kinship terms) and/or other kind of categories (social, economic, political) (see for example Needham's early studies of prescriptive alliance systems of social classification.³⁶) Thus what began as an argument about the ethnographic facts became also a largely unacknowledged dispute about the meanings of words used by anthropologists to describe such facts. It is not necessary at this point to inquire into the exact meaning of the assertion that designation of individual relationships is secondary to designation of group relationships. Once it is acknowledged that certain words may be used to designate genealogically defined categories, it is difficult to see what legitimate objection there can be to describing them as kinship terms and using them as a system of kin classification. But to describe them in this way is not necessarily to imply that their genealogical or kinship designata are their only designate or even ~~primary~~ primary or most important designate.³⁷ Such categories

are functional and not mutually exclusive with regard to the forms which serve to define them. Alternatively they may refer to the transmission of rights and duties from one generation to another under a system whose structure may be describable in quasi-genealogical terms but which is not necessarily connected to biological facts; these are relevant insofar as the people concerned posit such facts. Social units exhibit varying degrees of formal and informal organization and pertain to various activities and interests. Referring to the transmission of rights and duties, i.e. to political/jural constitutions and/or to socio-economic and demographic structures as for example allocation of labour and resources, or site-settlement patterns, kinship categories of genealogical "typology". leave unanswered the most fundamental question: by what criteria are the above "rights and duties" distributed, allocated or transmitted. Wherever the question has been given the attention it deserves, it has invariably turned out that kinship terms may refer to relations of genealogical connection, or to socio-economic relations or to both at once.

This requires that we assume that kinship terms are "tools" defined by their place in the system of tools; they always do much more than label individuals and most can be used by a skilful speaker of a language to refer to an almost unlimited number of people given the right situation. The operational potential of kinship terms derives from the fact that they have a "moral" meaning originating in the general belief system of the culture independent of tactical use, and tactical use itself covers much more than the denotation of kinship roles.³⁸ The term moral is used here in the way Firth uses it: "quality from the standpoint of right and wrong. Morality is a set of principles on which such judgements are based." This means

that as a value judgement kinship terms may contain elements of great significance which have nothing to do with what is normally denoted of as kinship and need to be defined in a much wider framework.

There is no reason to doubt that certain right and duty statuses (not always clearly specified in the ethnography) are ascribed to certain categories of kin, at least at the level of the primary senses of the terms. What then is the problem? The problem is the negative stance of the theorist to distinguish between kin classes and non-kin but kin-like classes, both of which may be designated by the same terms, or in other words between simple extension within the domain of kin classification and metaphoric extension. As is known, like many before and after him, Malinowski considered that when a kinship term can apply to both close relatives and remote relatives (or even non-relatives) the meaning of the term primarily refers to the close relatives and is only used for other individuals "by extension".³⁹ This notion is overtly psychological and has been critically discussed and criticised by Fortes (1957). An interesting statement on Malinowski's theory came in an article by Leach which uses Malinowski's own material to demonstrate that "kinship terms are category words" (Leach 1958). He argues that in the same way as it would be "ridiculous to say that the word table means "my table", it is unjustified to argue that the term "x" used for my "father and other individuals" means primarily "my father". The term refers equally to all the people so addressed unless there is clear evidence otherwise.⁴⁰ Leach is probably right in pointing out the ethnocentric character of the Malinowskian theory, but in advocating the unitary meaning of category he seems to forget the many ~~facets of~~ meaning of terms differentially stressed by every

situation. Lounsbury (1965), answering Leach, notes the primary meaning of kinship terms as that of reference to all the closer genealogical kinsmen, but this is seen as consisting of several components of meaning, some of which can be altered to operate various extensions. It seems though that he, as many others, is seeing the process of extension as an automatic process, the result of impersonal rules rather than human choices. The useful point of his position, however, is that for once the notion of the inevitable primacy of denotation of roles is removed from the understanding of kinship terms without necessarily being replaced by monocemic "categories" of people. From Radcliffe-Brown⁴¹ and later Steward⁴² the idea of patrilineal, patrilocal and exogamous band or horde became the framework for describing the structure and composition of local organization of the Australian aboriginal populations. In the 1960's Meggitt⁴³ and Hiatt⁴⁴ speculated that the horde (as defined by Radcliffe-Brown) probably never existed in terms of the formal properties which he attributed to it. Furthermore, they stated that even if we had complete data, the composition of hordes was so variable that any claims for the specific existence of a particular kind of social organization, let alone the universality of such social organization, must be carefully considered. Meggitt and Hiatt held that communities ranging from 200 to 300 individuals might have been the basis of local organization from which small task groups moved over the terrain. In response to these suggestions Stanner⁴⁵ established the concepts of estate and range. Estates pertain to sacred localities which are the ancestral home of clans and totemic units. Such localities are sacred and in theory are only accessible to individuals who have a claim through descent⁴⁶

and who are members of particular clans and totemic units. The range is composed of the areas which members of different totemic or clan groups could enter and cross for purpose of economic exploitation. Under normal circumstances the individuals of a particular estate formed a core group based on membership in the same descent group. The range was composed of the specific resources around the estate which these descent groups normally exploited. The border areas of different ranges intersected, and it can be demonstrated that such boundaries were not rigid over time. Thus, bands from different descent groups would mutually exploit adjacent areas as long as they avoided sacred and ancestral sites. Interspersed between ranges and estates were areas which different local groups exploited without reference to differential rights. Thus, the ideological basis of land and spatial mobility meant that the very source of existence, be it spiritual or emotional, was nearly always expressed through ties to the soil. It is quite possible that variance in structure and composition of local groups was fundamental due to regional and microenvironmental differences. Since household structure and composition and rules of residence are known to be the most adaptive aspects of social organization as it relates to economic imperatives, the stability or instability of group structure must be seen to derive from economic forces expressed through totemic and religious philosophies and manifested in myths, rituals etc..

It could therefore be argued that kinship distinctions as such have no relevance in aboriginal culture and only divide the continuity of cultural forms into arbitrary and meaningless categories and contrasts. What this means is that we cannot justify a notion of meaning which is distinct from use.⁴⁷ In this respect it only

requires pointing out that by distinguishing between meaning and use we leave the problem out of any context. No use of a term need be more or less problematical since, given the concept, the use is seen always as a particular attempt to use a tool for transforming a social situation or "manipulating" a new social situation by using a term which has been given meaning in a previous context.⁴⁸ In this perspective, kinship as a "concept" is an aspect of a culture's socioeconomic scheme and it may be better regarded as epiphenomenal to the "behavioral" patterns than as an epiphenomenon of any kinship terminology.

Because the terrain for most aboriginal cultures as expressed through locality, residence and livelihood is not only a territorial phenomenon, but also a "spiritual" force which relates to the whole question of existence and being, the question of economy, social relations and conditions of production and reproduction should be understood in terms of certain "tendencies" which characterize "primitive" societies in general; although not without contradictions, these are indicative of how these societies maintain their coherence while at the same time promoting organizational variability in the quest for population survival.⁴⁹

For example rituals, culturally animated through axioms and arrangements of symbolic discretion which provide emotional sustenance to members of every aboriginal society, they function to "regulate" economic objectives and to a certain extent demographic ones (for instance marriage, alliance relations). Rituals may serve as a boundary-maintaining mechanism which in turn may contribute or preserve the identity of a tribe or sub-group. They may also constitute an important survival mechanism in that they channel

surplus between sub-groups of a population and preserve an important property of primitive groups-egalitarianism. involving sharing and distribution of food and other items - including tools - both on intra-group and inter-group bases. At this point, we would note that being based on considerations of need and allowing for goods to flow, mechanisms like the above function to equalize consumption in the face of possible differences in production. The rationality of these functions lies at the very core of the society, that is at their economic base; because a system of kinship is a particular group of these relationships, within which descent and marriage-connections are socially regulated, selected and "retained", the real kinship is not a biological fact but a social one.⁵⁰ Accordingly the correspondence between productive forces and production relations is at the same time correspondence between economy and kinship. The interesting aspect here is not the correspondence between a certain form of economy and a certain form of kinship, but the fact that these systems take on a much larger number of functions and this may perhaps account for their more complex internal structure. Here is the problem of the range of demographic transformations which may, in a technical sense, take the "same" form under kinship or non-kinship conditions, but do change under the constraints imposed or the possibilities offer by economic conditions.

We may define a demographic system, in a general way, as consisting of the relations between people in respect of the resources and products of the environment; in attending to demographic factors however, we must avoid treating observed demographic processes as exogenous, biologically given constraints which determine the composition and economy of households, family, groups etc.. 10 10

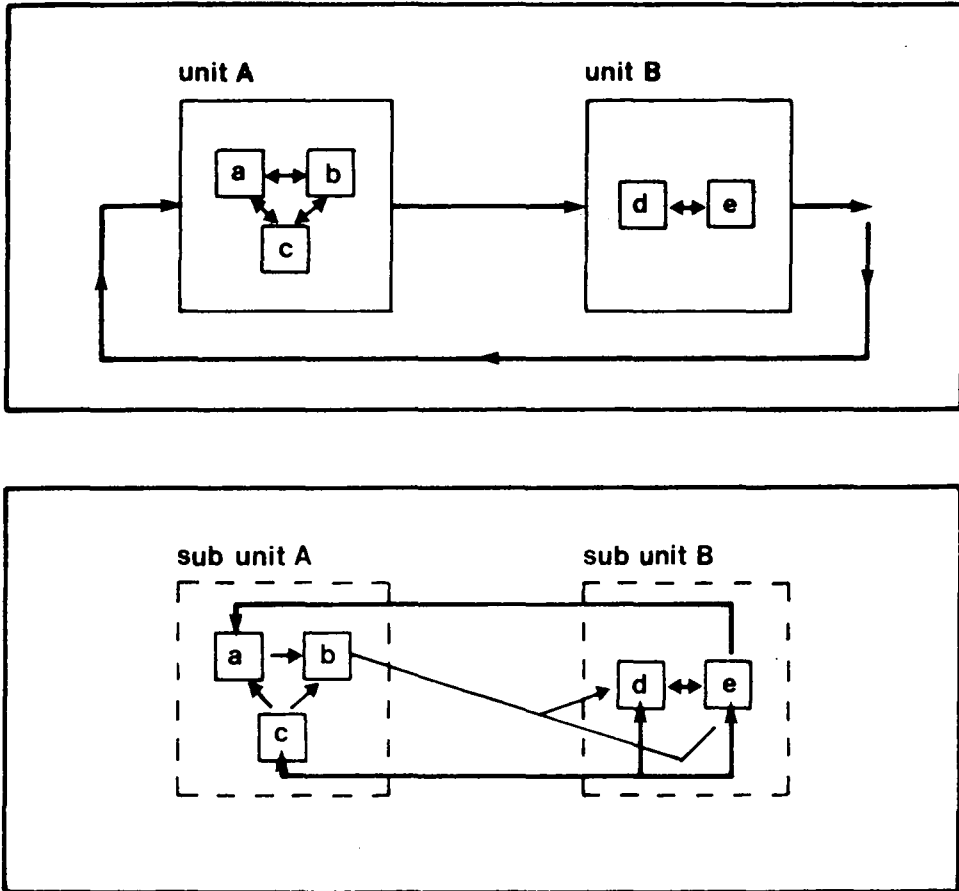


FIG. 4.7. Two different views of inter-system relations.

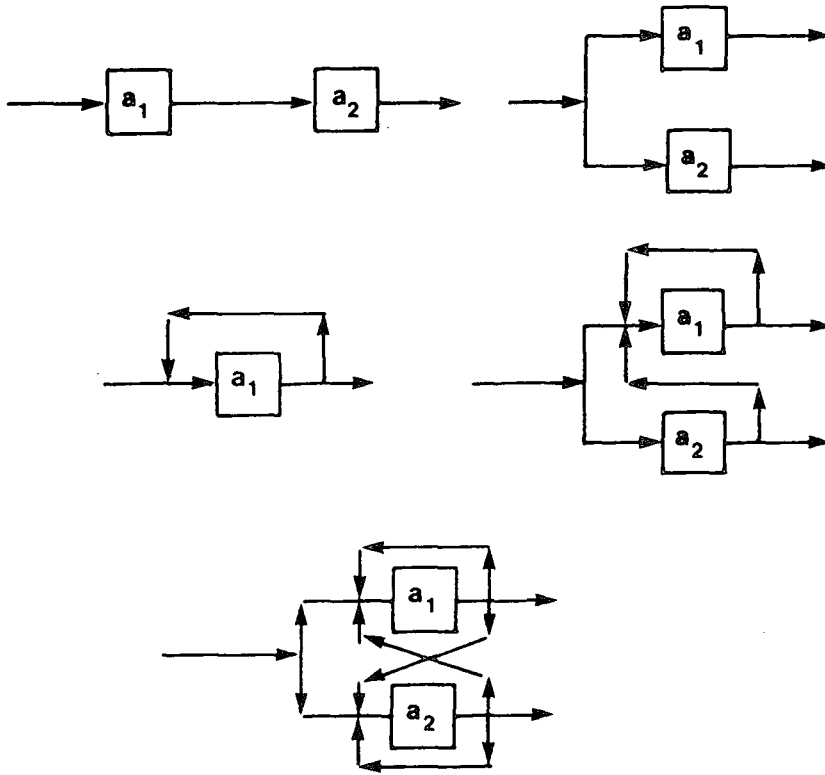


FIG. 4.8. Diagrams to show the kinds of relations that may exist between the elements within a system (adapted from Klein and Veloch 1967)

so would be to confuse social replacement with biological replacement and to overlook the strategies that people employ to exercise control over group size and composition, many of which are embedded in kinship customs. In these terms technology - alongside organization and ideology - may be seen to mediate relations both between men in society, and between men and components of the natural environment. The actual use of technology represents an aspect of the functioning of the socio-economic system, with the physical or organic consequences of that use embodied in the state of the ecosystem.

Pressing a mechanical analogy, we could perhaps view the act of hunting in terms of the transmission of information, by which the state of one system effects changes in the state of another linked system.⁵¹ (Fig. 7 and 8) Thus the thrust of the spear establishes the conditions for a trophic exchange of materials and energy from the animal to the humans; these actions are wilful, and involve the expenditure of labour in order to obtain from nature the means of subsistence. This is economic production. From an ecosystemic perspective, on the other hand, the human group appears as an undifferentiated population aggregate, dependent for its growth and reproduction on an input of materials and energy from its environment.

The suspicion of superficiality aroused by this kind of argument derives from a failure to consider alternative possibilities open to a society. The environment can only be defined relative to the subject whose environment it is, be it a single individual, a local or a regional population; it does not therefore exist as a system but rather as a set of possibilities. The environment does not itself specify the manner or intensity of its exploitation, but it does impose physical and organic constraints on the realization of

the socially defined objectives of the subject population. If we consider the case of social adaptation to the environment, a particular environment may facilitate some kinds of institution, or render others more difficult and still others impossible but there must be few if any environments which demand one and only one adaptation in the form of a particular social or technological institution. Thus the socially directed acts of economic production, distribution and consumption serve to effect a transduction from the social system to the ecosystem; this being so, we find population holding a similar system of kinship categories to those of others when their mode of production seems to imply the very opposite premises, or differential kinship under the same mode of production. Since there are therefore in practice always several alternative possibilities open to a society in its organizational and technological response to a particular environment, to say that the possibility actually followed is adaptive is not to say that no other forms of adaptation were possible.

It is of course true that where some natural resources are beyond the technological capacities of a people to exploit them, they are to that extent non-existent and in consequence a culture of hunters and gatherers will require a greater land area to support itself than a community of advanced agriculturalists; again in cases where people have religious, legal and sentimental attachments to particular pieces of ground they may be reluctant to move from them even when they are aware of areas more productive. For demographic determinants to be defined, we must consider both material and non-material elements. In considering defining population pressure, for example, we must specify the nature of the

pressure. Population pressure is not necessarily synonymous with the ecological concept of carrying capacity - as we have remarked above - which refers to the maximum number of individuals that a given area will sustain. Population pressure refers to the pressure of a "strain" (i.e. excessive need or demand) on one or more existing resources) which can occur well below carrying capacity. Resources can be relatively elastic or inelastic on the basis of their "renewability" but the correlative nature of their exploitation depends upon the development of the productive forces and social division of labour in the process of production.

With very few conceivable exceptions no economy, nor any society, has existed in total isolation from others. The unwillingness to take this fact into account, or at least to give it its due weight, is a major failing of recent archaeological hypotheses on economic/demographic change. And when contact between societies has not been disregarded,⁵² hypotheses of change have been constructed in which a single entity, or a group of entities conceived as a single unit, and modelled as undergoing change in apparent isolation with all the mechanisms involved integrated into the changing system. (Fig. 9) Most explanations fail to transcend a purely empirical level, which reflects a widely held positivistic belief that there exists a testable one-to-one relationship between empirical observations and the properties of prehistoric societies. However, a mode of production or a demographic reality is not constituted by the "structure" of the empirical evidence alone. It cannot simply be reconstructed through it. Thus, the analytical and empirical gulf between separate levels of information has to be crossed by an explanatory bridge dependent on cultural and theoretical insights rather on other

"sophisticated" techniques,⁵³ in order to lead us towards an understanding of the reality - a system of social reproduction that explains what happened between these levels. Because local production is rarely autonomous (even in tribal societies) and it is normally linked to a wider system of reproduction in various ways - exchange, trade, etc. - to determine the relationship between local and supralocal levels of organization and production, it is necessary to delineate the "limits" of the cultural systems within which these processes were operating. When only considering a local area, there is always a risk of overstressing the importance of the local level, and ignoring its place within a wider area. Marx made the important point that the distinct social and political forms and ideology of each society within a mode of production were closely related to the ways people organized their work and to the ways the ownership of the means of production was allocated - that is the spatial and structural distribution determining the limits and the potential of development within a larger system. In applying a Marxist approach to the foraging mode of production, it is best to see which aspects of the cultural and social superstructure correspond more closely to the base, because these are likely to give an insight to the underlying principles. Expanding reproduction, accumulation, sharing are some examples of such practices. The first refers to growth which is internally derived, e.g. through intensified subsistence production or settlement expansion. The second is a more general phenomenon, a surplus derived over and above the costs of reproduction; it may be derived from and correspond with expanded reproduction, or it may be derived through other means, as long distance trade, war etc., that is beyond its own productive basis. Sharing on the other hand,

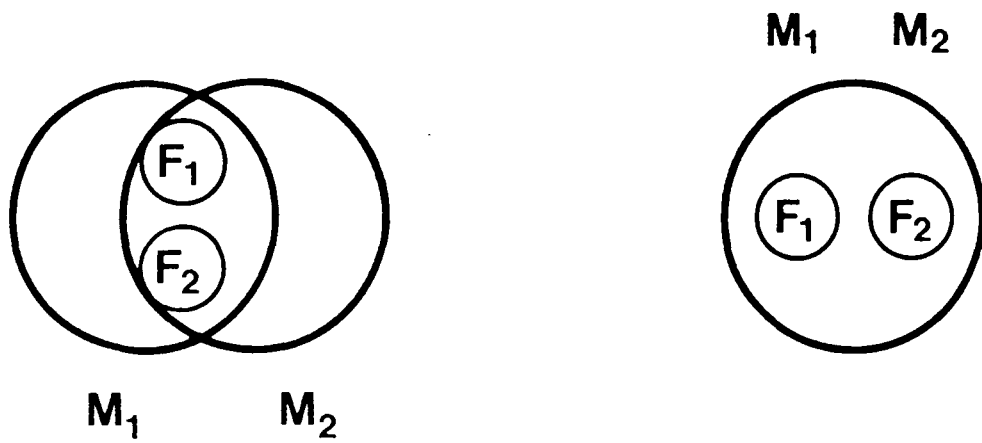


FIG. 4.9. A simple diagram to show entities and change into a system. $M_1, 2$ = external factors
 $F_1, 2$ = internal (group/s) "interaction".

is a practice which deeply pervades the behaviour and values of foragers within the "family" and between "families" and it is extended to the boundaries of the socio-economic universe. Just as the principles of profit and rationality are central to the capitalist ethic, so is sharing central to the conduct of social life in foraging societies. Sahlins (1965) and others, found the principle of generalized reciprocity to be a universal among hunting and gathering societies. Therefore, when we discuss sharing and other central features of the above peoples, we are not simply looking at a cultural practice, but at the expression of a common, universal condition in the foraging mode of production, which can be (and has been) altered by the impact of an external power with effects on the demographic "performance" of the population(s). The fact that communal sharing of food resources has been directly observed in recent years among dozens of foraging groups⁵⁴ is a finding that should not be underestimated. Its universality among foragers lends strong support to the marxist theory that a stage of "primitive communism" prevailed before the rise of the state and the breakup of society into classes (Engels 1884). Sharing food is accompanied by sharing space, both of which include population patterns; consumption, production and distribution as parts of the economic and demographic reproduction of any society.

In the following section we shall deal more specifically with the different approaches comprised under "paleoeconomy" and discuss to what extent a marxist framework of historical materialism can provide the key for a deeper understanding of the nature of hunting-gathering way of life - as a distinct mode of production - and the close relationship between economic and demographic processes.

4.4 "Palaeoeconomy" and Marxism

Of the many economic arguments that have been used to justify the existence of palaeoeconomic interpretations, the strongest are those of maximization and marginal value, both fundamental determinants of the neo-classical models. Although not expressed directly - as palaeoeconomists never adequately define what they meant by "economy" - this trend in their approach is emerging from two basic sectors of classification: firstly, concentration on the behaviour and subjective motives of the "economic man"⁵⁵ in a regulated pursuit of his interests, always trying to maximize his "income" (or usefulness) and minimize his outlays (or effort); and secondly a marked inclusion of marginal "values" (utility, productivity, scarcity of the environment etc.). Thus equipped, the palaeoeconomist can afford to ignore the character of general, objective economic categories connected with the strategies (or behaviour) of social groups and the different attitudes employed towards regional shifts of the productive factors.⁵⁶ Accordingly, a body of formal palaeoeconomic analysis was developed primarily concerned with a single set of questions: what are the "forces" which determine economic organization in a primitive society? the answer usually degenerates into measuring the effects of the natural environment rather than measuring the effectiveness of the human agency. In this way, without a clear set of objectives, the delimitation of economic space becomes a purely polarized procedure, with narrow, restricted assumptions for the "investment" of the social potential energy.

Although some attempts were made to redefine the "palaeoeconomic" formulations, if we set apart a rough typology of local "policy" options, a basic micro dichotomy concerning resources

availability, food procurement and group values - despite that, the central meaning of recent publications proves that the relevant "models" remained static and unable to provide a "complete" interpretation of the economic processes in the past - regardless of the enormous number of sites excavated, the data collected and the powerful techniques employed to analyze them.

It is a point of concern that the integration of the social with the economic is not so common in the archaeological interpretations; and when it is considered, authors maintain that both ecological and social approaches are valid so long as they remain confined to their proper spheres of influence.⁵⁷ The problem with this sort of casual empiricism is that nothing can be said - or suggested - about alternative responses and demands of a society/ band/ group, at any level of investigation. An example of such an approach - amongst others - we have in Bailey's (1983) elaborate justification of the palaeoeconomic model. "... I therefore propose to approach the problem from an alternative perspective, namely the point of view of the null hypothesis which specifies that subsistence changes are the result of environmental changes unless proved otherwise. In adopting this view it is important to emphasize that environmental change may have both direct and indirect effects on subsistence economy. The direct effects will be those which involve environmentally induced changes in the type of relative proportions of the available food species. Indirect effects stem from changes in more subtle and elusive properties of the environment such as the productivity (biomass per unit area per unit time) of the available resources or their accessibility." These theoretical discussions suggest that economic activities can only be explained by the non-

economic. This approach also leads to the emphasis on calorific estimates and lists of animal and plant species exploited at a particular series of sites which - as we have seen - in themselves tell us very little about the specific content of these activities.

Here is one of the central problems in the study of primitive economics: what is the difference between diet and economy and if inference from observational premises to theoretical conclusions can rely purely on analysis of the diet evidence when in addition that evidence is only partial? If we consider "palaeoeconomic" explanations they operate around two types of empirical realities: faunal remains and transhumance habits.⁵⁸ Although there is not any sort of factual interconnection between these two variables - the first is data-based, the second is an ethnographic reconstruction not necessarily valid for hunters-gatherers of the past - palaeoeconomists' work was, and is, directed to show the seasonal use of sites, partly from the study of bone samples. These faunistic remains in fact do not represent the environment in the mature sense: these are bones which are concrete examples, together with plant remains, artifacts form and spatial arrangement of houses and settlements, of certain processes which can be comprehended as socio-economic activity.

These objects and structures that are produced persist through a certain period of time and sometimes are subsequently reproduced, undergoing in both cases continuous modification, which eventually are qualitatively altered, pass away, or destroyed. All of these elements and processes have their own times and their own rates of change, which depend upon specific characteristics and their articulation with other objects and processes making up the structure of the system. The system is a complex of elements and processes which are interrelated and which contribute to the structure of the system.

co-existence and interpenetration with these other elements and processes.⁵⁹ Their temporalities and rates of change can be perceived and measured from the processes of production, circulation, distribution and consumption, from the useful objects created, exchanged and consumed, and from the processes of constitution and development of cultural formations and cultural objects. The complex interaction of these objects and activities and their rates of change form the real historical process, and provide the basis for the construction of appropriate regionalizations. The extensiveness of these objects and processes and the extensiveness of their effects determine the appropriate scales for their analysis. The implications of this argument is not only that all material and immaterial objects and events have spatial and temporal dimensions but also that these dimensions cannot be separated from their other properties because they are essential conditions for the existence of any object or event and because they affect, qualify, or modify many of their properties, with the result that the separate aspects of an object studied by disciplines distinguished in this way cannot be recombined additively. It therefore follows that an adequate conception of any object or event must be based upon a unified theoretical framework, and that it is no more possible for the systematic sciences to abstract from the spatial and temporal aspects of phenomena than it is for the "chorological" sciences to abstract from the phenomena that form the content of an area.

The reason for this is obvious. In the extreme case, each "variable" (whatever this represents—fauna, plant remains, stone tools, settlements, or even populations) would be defined as a variable (or later) in its own right. Clearly, in this case no

single structure can be located in more than one region. The individual structure becomes the explanatory level of the whole structure and the different aspects of the territorial and regional organization "are" identical by definition. It follows directly that technology or better the techniques employed for the manufacture of stone-tools for example, must be equal to the level of the exploitation rates of a given area or to the population rates and indices. It thus appears as if the relative importance of a distinct local "variable" adopted for analysis, provides the best possible explanation for the overall growth in the region which anyway is so much independent from the local environmental conditions that it does not seem to exist any freedom of choice in adopting a certain technique or the possibilities to give to that technique a certain flexibility. Everything will depend upon the efficiency of adaptive patterns within determined site-catchment locations. From the preceding it follows that the logical parallels of theories of primitive economics are those wherein both input and output can be stated in terms of environmental/economic concepts (preferably quantified) while social and cultural variables are considered as the parameters within which the equations are operative.

"Environmental constraints clearly have a great impact on hunter-gatherer adaptations and exert considerable influence on their form of social organization." "Since hunter-gatherers exploit, but do not drastically alter, their environment, this subsistence mode places general constraints on social patterning" (Yellen and Harpending 1972). The main objection to these definitions is that they have almost invariably been associated with inadequate or false conceptions of the relationship between human beings and nature. (H...

within geography the concept of evolution led to a concern with historical development and to generalizations about the history of geographical forms (but not to a concern with the processes underlying this historical movement), within palaeoeconomic approaches the conception is altogether based - although with differences of interpretation - upon a marked form of human social and cultural development under the continuous operation of predetermined biological and environmental conditions.⁶⁰ Another example of such an association we find in Gamble's (1978) analysis: " .. The change in resources and their utilization in the mesolithic is most satisfactorily explained by climatic factors altering resource scheduling and hence forcing a re-appraisal of the overall exploitation strategy. For the earlier periods, where the resources change quantitatively rather than qualitatively, there is evidence for climatic change and this must be taken into account before pronouncing on the adaptive behaviour of these palaeolithic groups." And elsewhere " .. now that the wider circumstances of groups utilizing the area have been examined we can evaluate the long term adaptation of these hunter-gatherers to their environment." .. " This constancy in adaptive behaviour is influenced by the strong physical constraints of the area which promote a predictable spatial and demographic solution to the problems of efficient resource extraction" "It can be seen from the above, that patterned spatial behaviour is a feature of hunter-gatherer organization. The observation that it is closely conditioned by the structure of the environment provide us with an opportunity to look for general patterns in hunter-gatherer adaptations to environmental circumstances" Because of this hierarchy of the importance of resources it is further assumed under the heading of Food care

and settlement system: "The discussion of territory, a space used habitually by a group of ten employs the term home base which has recently been defined as follows. By home base, we mean a habitation site or area, up to a mile or so in extent (or possibly more) within which camps were occupied each year for periods of time that in total generally exceeded the time spent at any other single site .. where there was access to a hinter-land productive of additional resources for maintaining the home base's population, procurable from satellite camps when expedient" (Rogers and Black 1976). Although this passage refers to a specific ethnographic example ... it is sufficiently general in its implications to act as a description of the major settlement type that is common to all hunter-gatherers. The other element of the settlement system that is generally recognized is the satellite camp occupied by smaller demographic units and for shorter periods of time. The establishment of satellite camps reflect an efficient balancing of energy and the total settlement pattern with its large and small foci must be viewed as part of the strategy that is designed to achieve the goal of optimising yields while minimizing effort"

The above lengthy quotations were indispensable to show how the fundamental problem always remain and always arises when that very concept and definition of theories and sub-theories are themselves functions of a particular ideology and epistemology. From the point of view of the discussion presented here, the separate existence of an entity, called palaeoeconomic theory (elaborated most consistently and explicitly during the past forty years by Cambridge archaeologists) is itself open to question. In different ways, many of the ~~positions~~ taken under the immediate impact of neo-class

(whether this was expressed in economics, geography, geology or biology) have proceeded as though the object of study was an abstract entity - one without effective structural relationships to the rest of the socio-economic system.⁶¹ The specific problem of idealized abstraction - as a relatively autonomous field of study - will be discussed later. The immediate question is the related one of the presumed "separation" of spatial behaviour from the economic system as a whole. Site-catchment analysis in determining site locations within certain radius, carrying-capacity terminus and dependence from one main factor of survival belongs to that sort of distinction. In fact, of course the two are intimately related at all levels.⁶² In the first place it is rarely valid to retain a complete distinction between the specifically locational decision of a population and all its other economic decisions. Secondly there is the fact that the nature of a population's behaviour will be influenced by its position within the total economic structure. And thirdly, at another level, the spatial shape of the economy is the result not only of specifically spatial forces, but also of the a-spatial dynamics of the system, the socio-cultural (including religion, kinship, ideology etc..), having a spatial manifestation. It is essentially this basic distinction and the assumptions on which it is based which unify the various studies that have been termed "palaeoeconomic", and/or site catchment analysis. Higgs et al (1967) in their study of Palaeolithic sites in Epirus, Greece, were the first to apply this form of analysis - although in a general form. The exploitation territory of a site was defined as the territory surrounding the site which is exploited habitually. This territory was then used as an analytic device for examining the resources

immediately accessible to a site's inhabitants. The studies of Higgs et al., exemplify the two techniques most commonly used for delimiting the territory to be examined in a site catchment analysis - namely the use of circular territories of fixed radii and the use of time contours. Both means of determining the area to be studied have since been widely used. Walking one hour for agricultural sites and two hours for non-agricultural sites has been used by a number of European historians although circles of fixed radii are more commonly used by Americanists but also by Europeans.⁶³ This sort of analysis, based on central place theory is less convincing nevertheless, in that it shows less concern with band spacing and population density and is less sensitive to socio-economic indicators as determinants of site location and instead emphasizes such considerations as the availability, abundance, spacing and seasonality of plant, animal and mineral resources as important in determining site location.

Linear spacing, or some other measure of spacing, and Thiessen polygons are both realistic approaches to estimation of catchment size and shape. (in Bintliff's view 1981) Their utility, however, is limited by several considerations. First they do assume contemporaneity of sites, and unless one can demonstrate this to be so, the result could be highly misleading. Second, they assume a comprehensive listing of the sites whose spacing is being examined. This could be a problem if analysis is being done of sites in an area that has not been systematically surveyed (as for example with the case of Epirus-Greece) or where a survey was done using quadrats, transects, or some other techniques yielding an areally discontinuous sample of sites. Third, use of either approach as used

no overlap of actually exploited area, no trade, no importation of resources, no labour processes, no productive inter-relations - in sum it assumes that the area within the polygon (or hexagon or circle) is the sole area exploited. Moreover estimates have been made for only one or two resources (reindeer exploitation for example) - albeit important ones, and most basic plant and mineral needs were satisfied within 5 km of the site (when transhumance was not employed). It is still a documentation of the fact that resources reflected at a site (including artefacts and stone tools techniques) may come from a far broader area than the small analytic territories used by most palaeoeconomists.

It is then impossible realistically to treat the spatial as a closed system. There is a body of knowledge based on primitive societies, their origin and evolution, and the "spatial" expression of their demo-economic system does have to be analysed. Changes in theoretical structure are brought about in response to the emergence of problems, but the way in which these problems are "seen" determines the nature of the response to them and the consequent theoretic development.⁶⁴ If the perspective of the whole subject is to be examined it is essential to step outside of that perspective. It is only by such a procedure that one can appreciate the nature of the subject for what it is and envisage any possibility of change along the dimensions of characteristics which typifies the subject as a whole.

A historical approach provides the necessary framework for such an analysis, both by retaining logical categories, and by refusing to accept as data any primordial or natural conditions.⁶⁵

Certainly, the study of the environment is necessary for understanding

the prehistoric economy, since the environment was the material base of the economy and set some limits on the economic possibilities. But different economies were established on the same material base by different peoples with their own traditions and with different levels of productive development. However, the line of palaeo-economic theory takes as given the nature of economic organization but ignores the historical context, and therefore the essential dynamic, of that form of organization. At the same time the theories themselves can be seen as part of a historical progression explaining an aspect of that given material world from which they stem. The historical perspective is thus twofold: firstly to set theories in their historical context, and thereby to illustrate both their reactive nature and the role they play in the context; secondly to see that the approach to palaeoeconomy - that is the nature of the theories themselves - should also take "population" (i.e. its object) in its historical perspective. It is also important to consider carefully the nature of the space in which location/settlement etc., is taking place, as most of the theories deal essentially with some form of abstract space. In the case of Lösch, for instance distance is the only quality of space considered as locationally significant and we have seen the results in recent palaeoeconomic studies. In fact, the "space" of a population's settlement or location is the product of a complex historical process.⁶⁶

The scientific representation of economic and social reality does not emerge by abstraction from the spontaneous or elaborated representations of individuals. It must on the contrary, contest the evidence in order to uncover the internal logic of social

reality. A tool has no social existence unless its rules of manufacture and use are known and communicated. These representations are also productive forces; a marxist approach in the social sciences therefore means to try to reconstruct, reproduce, the logic of the processes which give rise to the visible order of facts and institutions and which determine their possible transformations. When analysing the material remains of a society, palaeoeconomists fall back on the empirical part of disciplines such as geology, geography, technology, botany, economics and so on. Each discipline contributes its specialized information, and is necessary as a first stage; the problem is that no attempt is made to discover the internal components and the structural relations which define the social and material formation of these societies. In fact Marxism reveals the existence of two levels of rationality. First, the intentional rationality of individuals and groups acting within determinate social relations and upon these social relations on the basis of their own representations of these relations. Beyond this, there is also an unintentional rationality which consists of the objective properties of these social relations and of their specific laws of transformation. Far from being a mere "abstract" reflection of the relation, is one of the internal conditions of existence of a society.

Production is the objectification of human ideas and needs. Marx in Capital warned against a narrowly materialistic conception inherited from the abstract materialism of the natural sciences. In fact that point constitutes one of the most specific forms of neo-classical economics and its derivative theories - if not the most specific - and the most heavily criticized. The practical

consequence of this "abstract" materialism is to create a partly illusory relation which spontaneously grows up between individuals and their material conditions of existence, "acting" upon an imaginary reality. Dobb (1940), concentrating on the nature of abstraction, discusses this in some depth. "... the acceptance or rejection of a theory depends on one's view of the appropriateness of the particular abstraction on which the theory is based. ..In the first place, one may build one's abstraction on the exclusion of certain features which are present in any actual situation either because they are the more variable or because they are quantitatively of lesser importance in determining the course of events. Secondly however, one may base one's abstraction ..simply on the formal procedure of combining the properties common to a heterogeneous assortment of situations and building abstraction out of analogy." As Dobb points out, such distillations of common factors may form such a small part of the mechanics of any one situation that the real structure and motive power is lost.

Such is the case with palaeoeconomics today. We learn certainly of "bones and stones" but not of the labour processes on which a number of specific means of production and reproduction depend.

Moreover, the lack of systemic context, which is one effect of this mode of abstraction, is paralleled by an absence of historical perspective. In most of palaeoeconomic theory, (as in marginalist economics) the existence of numerous competitive "profit" maximizers is assumed as given and consequently as unalterable. The dynamic of the system as a whole is ignored. Thus, for instance, although territory, resource predictability, and hunter-gatherers' strategy

are studied, they are analysed as separate situations, as "existing" in different places, or in different sectors of the economy. A sort of static equilibrium is the rule and the aim. Internal contradictions and the dynamics of development, particularly the development of one from the conditions of the other, are ignored.

Putting together some of the points made in this section, we see that there is a contradiction even here. On the one hand there is the pretension to trans-system distillation, on the other there are firm roots in a contemporary economic arrangement. This contradiction arises not because a particular abstraction-pattern and concentration upon certain characteristics is incorrect, but because the whole concept of an a-historical formalism of human behaviour is a misapprehension.⁶⁷ Behaviour itself is a result of historical conditions and position within the total system at any point of time. Different forms of economic system, and different structural positions within any one such system, will lead to different forms of behaviour. Although such criticisms by no means apply equally to all analyses employing a "palaeoeconomic" approach, it is evident that the interaction between the objective material flows in a system and their social perception and expression still represents a central analytical problem; in dealing with settlement patterns, their components such as territorial boundaries or other analogues such as archaeological sites, complex of culture traits or other information systems as stone-tools technology we are concerned with artifacts of a system. They do not themselves possess organization but reflect the articulation of units and their social "management" within a society or a group.

Once again, therefore, the problem is not simply either that the

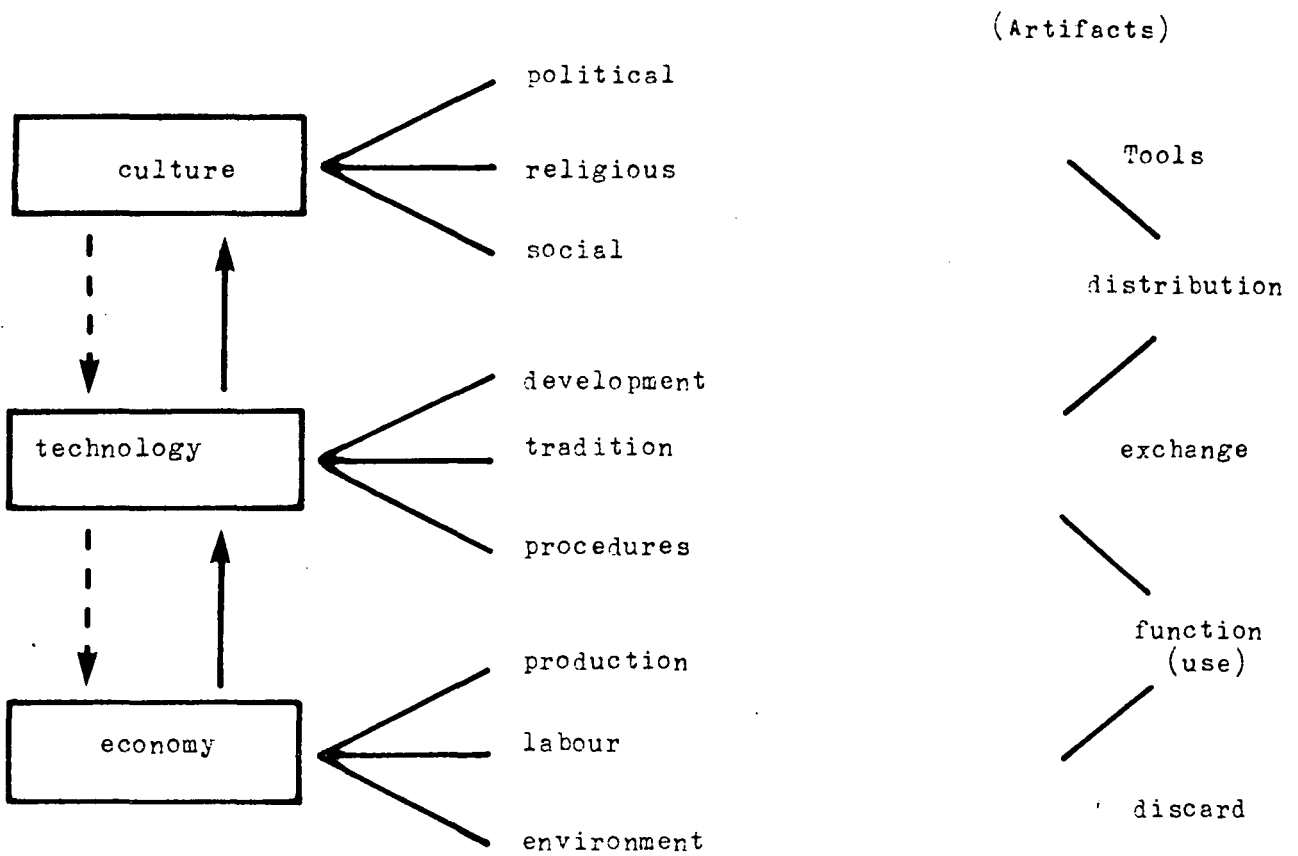


FIG. 4.10. Procedures involved with (or variables affecting) the structure of a "palaeoeconomic" system in general and tools accordingly.

of economic man, "designed to achieve the goal of optimizing yields while minimizing efforts" is an inadequate abstraction, or that "settlement patterns with its large and small foci must be viewed as part of that strategy" is a false abstraction, but that the questions which "they ask" perform the function primarily of allowing the expression of certain desired answers. There is a particular ideology determining even the definition of the objects studied, and the level of the main lines of interest - excluding the concrete labour-relations and contradictions between man and nature.

What is emerging then, seems to be the necessity to view socio-economic behaviour centrally in a historical context, to extend and develop the conception of the "palaeoeconomic" system by placing human social activities and labour forces at the centre of the analysis; that is the association of social, technological, environmental and cultural traits and patterns of change under more concrete historical accounts of their internal dynamics and actual evolution. (Fig. 10) But whether such a reorganization on that level and a reconstruction which "respects" the laws of historical transformations is possible is (it seems), at the moment, an open question.

4.5 Summary

It is probably fair to say that the formation of palaeoeconomic/demographic theories lies within one major overall "paradigm" for, though separate lines of development exist, they have much in common in terms of their epistemological approach and of their function in relation to the economic system of which they are a product.

The study of the exploitation of nature by prehistoric

societies brings together problems of the reproduction of labour power, of demography and of production, essentially that of the means of subsistence, since it is the metabolic transformation of the means of subsistence in the organism that produces human energy. Until now however, the production of human beings has not really been treated as an economic problem; demography has generally been regarded as surrendering to its own laws. In fact there are constant interactions between the individual bearers of energy. energy as the means of production, and production of the means of subsistence and the means of reproduction of producers.⁶⁸

Demography has often been considered more as a cause of biological sequences than subjected to conditions of production. Indeed, demography is dependent on production and circulation of food. This is a field of economic investigation to be thought over, taking into account the continuous conversion of subsistence into labour power, of labour power into productive agents and producers of subsistence. To build, in the first place, a "palaeoeconomy" capable of extending the analysis of the appropriation of nature to phenomena too often considered as natural or accidental or aberrant, such as famine, disease, low population etc., means to put men back at the "core" of their development, that is in their historical specificity, rejecting the principle of natural, eternal laws.

Applying the principle of historical specificity to hunter-gatherer societies does not mean that every element in a local system is unique to a given mode, but only that the whole structure and arrangement of elements is historically unique, specific to a given mode and to the social dimensions within the mode. This of

course entails difficulties. It also means that the aggregate population result at any level operates inside the relations of production and thus "determines" the type of information we may have about the members of a society and the nature of their system. Since the labour process itself - the process in which the forces of production transform an object of labour through labour - is the bearer of relations of production, in fact the labour process only exists and transforms itself in a specific process of production.⁶⁹ Among those aspects of the labour process which are thus "informed" by these relations, the means of labour involve above all tools and their technical knowledge, which are therefore bearers of the relations of production to which they are adapted, as are all the relations of cooperation. As we have seen, for Marx a mode of production is an analytical concept describing the dialectical unity of forces and relations of production. To define a particular mode of production should therefore be to specify both the forces of production - in terms of relations between people and the instruments of their labour - and the relations of production in terms of appropriation of territory and its resources, taking a communal form in pre-class societies - whereas in class societies surplus labour and over-exploitation are the transformations that set up new relations of production and develop with them. What is important is not whether the appropriation is either heavy or moderate, whether compensation exists or not, but whether it relates to a totality of socio-economic relations in such a way that production cannot be continued without it.

All these raise a set of problems. In the present state it is not only that there has been little exploration of the way

which data about the prehistoric past can make their own contribution to the creation of new theoretical-historical concepts but the interaction between the existing theory and archaeological data has tended to be a one-way process. There is an apparent difficulty of interpretation because of the unsatisfactory control over the samples, problematical techniques, and other factors related to prehistoric variability for example within the sequence of use of sites and between sites in an area, in terms of changing relationships between the prehistoric inhabitants of the site and the changing environment, in terms of the continuous "use" of a site in spite of environmental changes, differences or similarities in technology both on inter-intra locational level. Archaeological data may be difficult to analyse, but only the most "insisting" adherent of a certain ideology would deny that the prehistoric record can offer different issues and explanations⁷⁰ above the environmental/ecological interpretations which to-day dominate research prehistoric economies and demographic patterns. A coherent palaeo-economic perspective should therefore take into account of all the dimensions, viewing the basic necessities of existence in terms of both social and ecological context and conceptualize the linkages between them. Artifacts in this sense may not be very sensitive to environmental constraints, instead they should track more closely the production and reproduction of a set of social relations. We may note on this basis that we can contrast capitalism to all other modes of production as extra-economic factors also enter into the means of appropriation in non-capitalist modes of production, whereas in capitalism economic factors alone intervene and to this level ~~the~~ results in terms of decisions and strategies are

easy to recognize. To this is related the fact that most of existing palaeoeconomic theory is able to an extent to explain "individual" scale decisions according to the environment as in some way rational, but helpless in face of the resulting systemic-level irrationality, placed as it is within an ideology which defines its object and mode of analysis in a way which makes effective interpretation impossible. Finally, perhaps at this point, it may be useful to recall Engels:⁷¹ "Having at the same time, ample opportunity to watch the middle classes ... I soon came to the conclusion that you are right .. in expecting no support whatever from them. Their interest is diametrically opposed to yours, though they always will try to maintain the contrary and to make you believe in their most hearty sympathy with your fates. Their doings give them the lie. I hope to have collected more than sufficient evidence on the fact that .. the middle classes intend in reality nothing else but to enrich themselves by your labour while they can sell its produce, and to abandon you to starvation as soon as they cannot make a profit by this indirect trade in human flesh."

Notes and References

1. See chapter II.
2. On this, see: Birdsall J 1973, (especially the comments by J. Bennett, L. Thomson) Boserup F 1965, Dumont F 1972, Flannery K. 1969, Hayden B 1972, and the articles included in Swedlund A 1975, Ward and Weiss 1976, and Zubrov E 1973.
3. That is exactly the area where neoclassical economics scored its greatest triumph - on the realm of allocation theory, which had wider implications - on the recognition and explanation of different economic systems - other than "pure" (Ricardian or Keynesian) economics.
4. Cook S. 1975
5. Lenin V.I: Imperialism, the highest stage of Capitalism.
 What Lenin notes here is precisely an essential distinguishing feature of modern imperialism. The occupation and/or manipulation of a weaker by a stronger nation and the building of empires by powerful military states have occurred frequently in human history. The value of distinguishing different periods of history is to provide a useful analytical framework for discovering and understanding the main operating levers of the particular stage under study. The contradictions inherent in the origin and development of nation states were themselves major forces for capitalism's global expansion. But at the heart of Western expansionism was the growing disparity in technologies between the leading European nations and the rest of the world. The most important aspect of this disparity was technical superiority in armaments, for this superiority

(and not the level of technology as such) enabled the West to impose its will on the much larger colonial populations. And along with this came important psychological instruments of minority rule by foreigners: racism and arrogance on the part of colonisers, contributing to much of the socio-anthropological descriptions of the indigenous populations and justifying their economic exploitation.

6. Boas F 1894, Cook S 1973, Dalton G 1961, 1968, 1971, Firth R 1967, Hill P 1970, Honigman J.S. 1973, the articles included in: Le Clair F-Schneider 1968 "Economic Anthropology" mainly those by Herskovits M (section II), Hagen E (section III), Burling R (section V), Bohannan P (section V), Barth F (section V). See also Mause M 1950, Sahlins M 1965.
7. Cleaver H 1979, Hardack G-Karras D 1974, Harrison J 1978, Kühne K 1972, Marcus L 1975.
8. Marx K, Capital Vol III, Grundrisse: A Contribution to the Critique of Political Economy. See also Cornforth M 1977, Gouliane C.I. 1968, LuKacs G 1971.
9. Marx K. *ibid* and Capital Vols II, III. Also Marx-Engels: Pre-Capitalist Socio-Economic Formations, The German Ideology.
10. Value becomes whatever capitalism appears to value, in the fashion in which capitalism seems to value it. There is apparently no other reality; the superstructure and the basis represent a simple vertical harmony, in which schema ~~there~~ appear only occasionally imperfect performers and the

need, therefore, for yet again more perfect - and dictatorial - regimes of instructions. The observer who regards the capitalist system as the only admissible social super-structure must regard whatever valuation the capitalist circulation process puts upon commodities as the only value of interest for the real practical world.

The result is empiricism, including empiricist "economic theory".

11. In the "classical" economic tradition - that of Smith A, Ricardo D, Malthus T, Mill JS, Marshall A.
12. According to R. Firth (1972, 1980) there are three major ways in which capital is utilized in the economic process; as a productive asset, as a means of facilitating control over purchasing power, and as a fund for investment. While some scholars have expressed scepticism (only) over the applicability of the capital concept to preindustrial economies (Dalton 1969, Sahlin 1969, 1974, White 1959) there have been several studies that have identified and analysed each of the three functions of capital in such economies (Firth 1965, Firth and Yamey 1964, Foster 1942, Bohannan 1968, Barth 1968, Barnett 1968, Pospisil 1968). For Pospisil for example it does not exist even as a necessary precondition for a theory or an analysis of "primitive" economic formations as: .."We classify the various peoples of the world either as civilized or as primitive societies. While civilized people are popularly regarded as logical, having a complex technology, and an economy characterized by true money and by markets, primitive people have been credited with only a prelogical mentality.

and a crude technology that has its "logical" consequences a simple, nonmonetary type of economy. Their economy has been considered by various writers to be either over-individualistic or communistic. As will be apparent, the Kapauku society does not fit such oversimplified generalizations. It combines, strangely enough, one of the world's most primitive technologies with a rather sophisticated and complex economic system. The latter in its main features resembles a simplified version of capitalism rather than any sort of primitive communism."

It suffices to recall the title of this article: "The Kapauku individualistic money economy", and that "one of the major pillars on which the Kapauku economy stands is the use of true money. Cowrie shell and two types of necklaces function in this society as the common medium of exchange and the common measure of value."

13. Thus even for economic anthropologists like S. Cook (1973), although "there is a very healthy trend in economic anthropology away from argument in favour of the applicability of formal economic and towards its actual application to hypothetical and real situations" the result is that this trend is represented as following "For example Lee has adapted the transactional models of input-output economies to the analysis of Kung Bushman subsistence; Edle has utilized econometrics to measure variations in the adoption of cooperatives by Jamaican fishing villages; Joy has applied matrix analysis to Barth's data on the division of labour and exchange in the mountain fur economy. Orans has used

the maximization principle to formulate a model of caste relations in India, Pakistan and Ceylon. Cook has employed time series and supply and demand analysis in a study of price and output variability in a peasant-artisan stone working industry in the valley of Oaxaca; and Schneider has analysed economic relations among the Wahi Wanyaturu as a competitive decision-making process." The marginal revolution had significant implications for both the scope and methodology of orthodox economic theory. The analytical power of the "new" technique and the plausible simplicity of its basic assumption - that consumers and producers would naturally behave so as to maximise their satisfactions or profits in a competitive market - was immensely attractive to students of "pure" economics. Neo-classical theorists accordingly narrowed the scope of their subject matter so as to be exclusively confined to a study of market processes. Consequently, although individual neo-classical theorists may have been as strongly activated by political and social objectives as any of their predecessors among the classical economists, they concentrated most of their attention "qua" economists on abstract theoretical issues which had no immediate connection with the urgent contemporary questions of practical policy. No doubt the differences between them were similar to the earlier differences between Malthus and Ricardo or between Senior and McCulloch. But they were on a different scale, the area over which they would admit agreement generally was narrower and the resolution of any conflict had wider implications for the orthodox view of the methodology and scope of economy in

general. Thus, for example, while deliberately refraining from drawing exclusive boundaries and while freely admitting that political economy shades off into other social sciences and draws heavily on the moral sciences, Keynes stresses again and again the need to distinguish sharply between what he called positive economics i.e. economic science, and all other conceivable aspects of political economy. The marginal revolution drew its inspiration from mathematical rather than philosophical techniques of analysis and it had the effect of diverting the attention of economists from their search for the meaning of value - a search which had deep philosophical implications - and to focus instead on market price. And in the event, the neo-classical theory of value became more than a theory of price, it became a theory of the allocation of scarce resources to specific uses under the dual incentives of utility maximization for the consumer and profit maximization for the producer.

The alternative open to them was much less attractive. The Marxian alternative, which is discussed throughout the present work, lay too far outside their cultural tradition to be a serious competitor. A less heretical development of the Ricardian tradition might also have led in dangerous directions. The neo-classical attempt to develop a value-free economic science seemed right because the totality of "bourgeois economists", as Marx would have called them, accepted certain implicit commitments.

When, in the inter-war period, advanced capitalist economies were confronted with problems of persistent unemployment and

trade depression, so that increasing government intervention began to seem not only acceptable but actually desirable, the ideological commitments that had seemed so unquestionable to the pre-First World War era began to crack: and when in the post-Second World War era the problems of economic development in the underdeveloped countries were found to be conditioned at least as much by political and social as by economic factors, then it became easier for the bourgeois economists to examine the Marxian model on its scientific merits.

Although for the economists this had happened by the late sixties, for the majority of the anthropologists and archaeologists (with the exception of the neo-marxist French school) it does not seem that this had any serious effect at all, except some scanty references to marxist or pro-marxist "models".

14. Marx K. Capital, Grundrisse, The German Ideology, Letters to Vera Zassoulitch;
Engels F Dialectics of Nature, The Origin of the Family, Private Property and the State, Pre-Capitalist Socioeconomic Formations. There is of course an enormous volume of literature on the subject, mainly from Soviet (and other socialist countries) scholars as well as from Western countries (especially France and Canada). a selected part of which is included in the Bibliography, as it was virtually not possible to mention them at all.
15. Fine B 1980, Kuhn T.S 1970, Swingewood A 1978.

16. Concerning competition it may be argued that for a particular "sector" (translated into group, band in economic anthropology/archaeology) increased competition (temporarily) squeezes profit margins, but this cannot be generalized to the economy as a whole. For then capitalists benefit from the competition in the sectors from which they purchase inputs. On the other hand it should be remembered that the interests of capital are not fixed historically, (for example maximizing surplus appropriated from a colony) nor, even if they were, would they assume the same form. As we have seen, capital is increased in the process of production itself and this is reflected in the location of production (periphery coordinated with centre). This does not seem to us the case for the Kapauku, Tiv, or any other "primitive" society.
17. Bettelheim C 1969, Fine B 1980, Fariack G-Karras D 1974, Mandel E 1976, Rowthorn B 1974, 1976, Laclau E 1971.
18. A reading of the marginalists is most useful since they have such an impact on the formation of the concepts and methods of economic anthropology - A. Marshall's "Principles" are the first source but W. Jevons' (1970) book is quite useful. For a survey and critique of much of neo-classical economics see Green F - Nore P 1977. See also, Deane, P. (1978).

We note in this respect the extensive debate between Formalists and Substantivists which has dominated the Anglo-American anthropology some years before and still continues

to-day under a different form but not with different content. In spite of their opposition and differences in meaning, the two theories can be found embedded in the very heart of empiricist epistemology moving within a frame of argumentation dealing essentially with questions of the applicability of classical economics to the study of primitive societies or, to put it in another way, of the suitability of primitive societies to be "investigated" by the methods of capitalist economy. This is we think the main reason that they remained "intact" from the impetus that the French school of economic anthropologists had given by reformulating, under marxist or neo-marxist ideas, the general methods, scope and approach to the economic processes of "primitive populations.

19. Samuelson P 1976.
20. Semenov YU.I 1974.
21. Thus for example, Polanyi understands by "economic" in its substantive sense above all production in general. Dalton most commonly uses this term in the sense of economic organization and speaks of types of systematic economic structure. Polanyi's substantivism is best understood as an inversion of classical economic thought, and his altruistic non-market economic man is the antithesis of the selfish market economic man of classical economics. On the other hand, while formalists such as Firth or Herskovits were far too conscious of the specificity of primitive economy to try and apply at uncritically all the concepts of formal economic

theory, nevertheless they accepted that of the concepts of marginalism a few are applicable to primitive economy like the proposition that economic activity is rooted in the application of limited means to alternative ends, that this application is regulated by rational choice and that the aim of individuals engaged in economic activity is the maximization of satisfactions but with the distinction that this choice depends upon social and moral values lying behind particular economic systems, contrasting thus the social with the economic. (Firth 1965, Herskovits 1952). Connected with this is the assertion that "economic" anthropology deals primarily with the economic aspects of the social relations of persons. The whole economic system of the people is run with this complex set of values in mind. From this it is seen, in the second place, that many of the wants upon which their economic life is based are of an immaterial kind (that is unconscious, keeping thus demographical variables to biological potentials). Where this leads us is that in one way or another, "facts" are inherent in man's nature, they cannot be overthrown and as such are inevitable or unavoidable under any socio-economic formation and any sort of relations.

22. Bartholomew A, Birdsell J.B 1953, Birdsell J.B 1957, 1958, 1968, 1975. Clarke D.L 1977. Castell R." 1972, Foley R 1977, Hassan F.A 1974, 1975, 1977. Tilley C 1981.
23. Schaff A 1978.
24. Althusser-Balibar, 1980, Friedman J. 1974, Levi-Strauss 1974, Schaff A 1978.

25. Bloch M 1971, Holy L 1976, Seccombe W 1983, Scheffler H.W 1971, Vinogradoff P (cited in Krader L 1966)
26. In recent years ecological explanations have invaded economic anthropology and archaeology; yet we would hold with certain structuralists on that matter, that the environment in itself is only a meaningless though certainly a living entity. The environment never "has an effect" as such; the effect of environmental changes and variations is always determined by the patterned constitution of the locally occupying culture (see Levi Strauss 1972, Sahlins M 1976).
27. Anthropologists and archaeologists are accustomed to examining systems that are in "stasis" - according to their view - those which exhibit nonchanging distribution patterns and relatively unchanging production levels. Yet, the distinctive characteristic of self-sustaining systems is exactly their lack of "growth" through use of the surplus, or exploitation. Reproduction of the producers, with the exception of certain forms of slavery, is a requirement of any system. but strict reproduction of the system itself is the end of a certain economy only.
28. Godelier M 1972, 1975, 1978 (a.b)
29. Godelier M 1975, Leacock E-Lee R 1982, Meillassoux C 1972, Peterson N 1975, Stanner W.E. 1965, Terray E 1972, Yengoyan A 1972.

With regard to the definition of "a foraging/hunting mode of production" Godelier does not seem to accept that the "hunting mode of production" or "pastoralist" or "neolithic" ever

"existed" as such. He states: "we should remember that the terms "hunting" "pastoralist" etc. mode of production are inadequate, since they emphasize techniques and modes of subsistence i.e. relations between human beings and nature, rather than focusing upon the nature of the relations of production i.e. relations between human beings. On the contrary Meillassoux holds a different position (1973); although he notes that the model he proposes may not be generalized to be applicable in all aspects to other hunting-gathering peoples, he clearly sees hunting-gathering as constituting a specific mode of production.

See also Althusser-Balibar, 1970, Hindess and Hirst, 1975, Keenan J, 1977, Leacock E, 1981, 1982. The problematic of the above positions will be considered in a subsequent section (4.4) of the present chapter.

30. Beaucage P 1977, Damas D 1969 (a,b), Esche 1976, Keesing R.M 1975, Laughlin W 1968, Lee R.B 1972, Godelier M, 1975, 1978 (a,b,c), Sahlins 1972, Siskind 1978, Steward J.H 1967, Thomas E 1971.
31. Andreyev Il 1985 (a,b), Brenner R 1977, Buraway M 1974, De Ste Croix 1981, 1984, Diamond S 1974, don Santos T 1970, Hilton R 1984, Hindess B-Hirst P 1977 (a,b), Godelier M 1975, McQuarrie D 1978, Shanin T 1971, Polanyi K 1968, Wallerstein I 1975, Wittfogel K.A. 1957.

Colonialism, neo-colonialism and its effects have already been discussed in the previous chapters of the present work. and we

will not be repeating these here. See in addition: EkholmK-Friedman J 1982, Capital Imperialism and Exploitation in ancient world systems, and Gruen E.S. Imperialism in the Roman Republic, 1970. -

33. Greek and Roman expansion and dominance for example were major causes of the long transformational process of primitive society. See descriptions: Diodorus Book VII, VIII for Ethiopia and NE-SE Africa, Strabo for the main regions of Asia and Asia minor, India and Iran. Babylonia, Syria, Arabia, Assyria and Egypt; Africa generally, from 11-17 respectively. in the Geography of Strabo. Also Herodotus, Aristotle, Pausanias, Artemidore, Agatharchydes: Periplous on the Erythrean Sea. Also: Lovejoy A.O-Boas G 1935, Primitivism and Related Ideas in Antiquity, Griffiths G.J 1958 Archaeology and Hesiod's five ages, Vlastos G 1946 On the Prehistory in Diodorus.
34. It is important to stress that contrary to what some anthropologists/archaeologists seem to believe "mobility" itself does not constitute permanent movement. The case with some hunting-gathering people is that they travel from place to place in their territory, sometimes to acquire adequate food resources, sometimes to visit other groups or relatives, and when just a member or two from the family, or some members of a group, are travelling for any reason, this certainly does not mean "mobility" of the whole group or band. The territory of a band is stable and fixed as their home-base in many cases, like for example in the Pygmies, or Tiwi or Yanomamo, Kuikuru of the Amazon basin etc..
35. Bloch M 1971, Ember C 1978, Holy L 1976, Kuhn T 1970, Lounsbury F.G 1965, Needham R 1971, Sheffler H.W 1971, 1973, Schneider 1972.

36. Godelier M 1975. Goody J 1973. Fortes M 1957, 1969. Keesing R.M 1975, Leach E.R , Levi-Strauss 1969.-Lounsbury 1964, 1965, Siskind J 1978, Scheffler H.W 1971, 1973, Schneider D.M 1973.
37. Bloch M 1971, Holy L 1976, Scheffler H.W 1971, Schneider D.M 1972.
38. Bloch M 1971, Firth R 1961, 1964, 1967, Lang S.M 1965, Lounsbury F.G 1964, Scheffler H.W 1972.
39. Firth R 1980, Leach E.R , Malinowski B 1921, 1922, 1939, 1947.
40. Spencer and Gillen, for example, asserted on numerous occasions that Australian aboriginal languages have no words equivalent to English father, mother, brother, etc.. Of the Arunta in particular they explain: "the whole classificatory system and social organization is based on the existence of .. exogenous inter-marrying groups," and .. the fundamental feature of the terms used is that they are indicative, sometimes in a secondary way, of individual relationships" (Spencer and Gillen 1972) Bloch (1971) has argued that Merina kinship terms refer to "moral concepts" which may or may not contain an element of genealogical denotation, and Schneider (1965, 1968, 1972) and Silverman (1971) have argued that genealogical and social relationships are both "distinctive features" of American and Banaban kin categories.
41. Radcliffe-Brown A.B. 1931, 1952.
42. Stewart J.H 1936, 1967, 1968, 1976.

43. Neggitt M.J 1972
44. Hiatt B 1967
45. Stanner W.E.H 1965, Yengoyan A.A 1979.
46. Implying "descent" within a broader context including agnatic, cognatic, affinal or others groups. The definition of descent goes back to the work of Rivers (1957) and is a continuous subject of discussion and controversy. For a critical reassessment and an extended literature see Holy L 1976.
47. Leach E.R 1970, Scheffler H.W 1972, Vionogradoff P 1970.
48. In a previous context of tradition, rules, religion, or inter-intra families relationships.
49. There is of course an extended literature on the subject, many of which are included in the bibliography of the present thesis. See amongst others, Dahlberg F (ed) 1981, Forde D 1934, 1954, Godelier M 1974, Laughlin W 1968, Lee R.B. 1968, 1972 (a,b), Sahlins M 1972, Semenov YU I 1965, 1974. Porshnev B.F 1979.
50. Since biological/social is one of the few principles to which social scientists give much attention, it might be noted that one of the basic objectives of this, as far as it concerns the ethnography of kinship has been to show that the categories of near and distant (as Sahlins 1977 notes) vary independently of consanguineal distance and that these categories organize actual social practice. Sociobiologists have taken the equally

well-known tendency of "economic" reciprocity to vary in sociability with kinship distance as cultural evidence of biological "nepotism" hence as a proof of kin selection. As one can see from the discussion on that matter this conclusion is based on an elementary misunderstanding of the ethnography. See Sahlins 1977, Godelier M 1972, 1975, 1978 (a,b). Articles connected with the subject in the journals: American Anthropologist, Current Anthropology, Soviet Anthropology and Archaeology, Soviet Ethnographic Studies. Critique of Anthropology. La Pensée.

51. BAR I, 1978, especially Anderson A, Hodder I.R and Newson L (Green D, Haselgrove C, Spriggs M eds.)
52. BAR I 1978 (Green D, Haselgrove C, Spriggs M eds.) articles by A. Anderson, Hackenbery R.A 1933.
53. Logically, the first problem that anthropologists/archaeologists face is the definition of the social group or groups under study. Unlike the individual organisms or even the breeding populations studied by biologists, social groups are not given self-defining units. The logic of taking a human population rather than a typological entity as a framework is compelling. Like the physical environment it occupies a human population has inherent organisation. The natural variables are paralleled by a web of social and economic variables that interact with each other and with the physical environment to affect the size both of the human population and of the area it occupies. For a reconsideration and theoretical methodological

problems of techniques and multilevel analyses see Falter T.W. 1976.

54. See especially: Groos D.R 1973, Leacock E 1981 (introduction and notes to Engels: The Origin of the family, Private Property and the State), Leacock, F-Lee R 1982, Lee R 1980, Kahn J.S-Llobera J.R 1981, Wessman J.W 1981.
55. For a discussion of this term, its application within economic anthropology, comments and references see previous chapters, especially chapter I. For clear examples of such views in economic archaeology see in Baileys, M.G 1981, Bintliff J 1981, Gamble C 1978, Rogers and Black 1976 articles.
56. We refer specifically in that section to the palaeoeconomic body of research as exemplified by the Anglo-Saxon school, and the American tradition of environmental archaeology. European and mainly French lines of thought, followed a different direction in the study of the socio-economic domain altogether as well as in the economic aspects and functioning of the "primitive" societies. Exceptions though do exist with the British/American approach as for example: Bender E 1981, Davidson I 1981, Ingold T 1981, some articles from Hunter-Gatherer Economy in Prehistory, a European perspective 1983 (Bailey G ed.), Leacock E 1981, Leacock F-Lee R 1982, also Bicchieri M.G 1974 and others.
57. See for example how the social and economic rationality is discussed in Bailey's article: "Concepts, time-scales and explanations in Economic Prehistory", 1981, a. "It seems that there may be a number of different types of "social" explanation, some of which do not differ from those that would

be advanced by palaeoeconomists themselves If the aim of these sociological excursions is to demonstrate that certain sorts of social formations are necessary to facilitate certain patterns of economic production, or to emphasize social flexibility as a general property inherent in human behaviour which allows the possibility of economic transformations unique at the species level, then these are scarcely matters of great contention. If, however the aim is to demonstrate that changing social relations are an independent variable of sufficient force to deter or initiate long-term economic changes, this remains a hypothesis in need of testing against the prehistoric record." For the moment anyway it seems that this science is primarily committed (in Britain at least) to gathering empirical data - "not only because research policy demands it."

58. See mainly Higgs E.S 1972 and 1975 comprising articles which provide a highly reliable mirror of the Palaeoeconomic approach as advocated by Higgs et al. There is a tension running through most discussions of the economy and its relation to the non-economic periphery, with the exhortation that we need to "formulate models with specifically archaeological objectives and data in mind." This perspective (as Tilley, 1981 states) attempts to relate population, resources and technology and to see how these factors are related over long time periods. However, the only resources considered are categories of potential land use and animal and vegetable foodstuffs. There is no detailed consideration of resources which do not have direct subsistence potential

or any reference to the exchange of commodities or intra- and intercommunity relationships except in relationship to transhumance systems. This extremely restricted arena of discussion is predicated on the assumption that archaeologists can deal only ineffectively with social and ideological parameters of human behaviour which in the long run have little significance.

Note especially articles in Higgs 1975 *ibid.*, by Barker G.W and Dennell-Webley; Bintliff (1981) following and emphasizing the palaeoeconomic approach through catchment analysis mainly, argues that .." it is most important to recall that the primary papers of CA by Higgs et al argued that most sites in less complex societies should be rewardingly investigated by CA. It is expected that sites will be found where the predicted fit between catchment and site type is clearly unsatisfactory, and this should stimulate specific research into particular nature of site occupation, the possible relationships with other sites and so on. CA does however assume that most sites are in fact sufficiently dependent on local foodstuff availability to reflect the disposition of notable quantities of such resources in their reconstructed catchments. As far as I am aware, this postulate has not been refuted, and indeed my data and that of most active field palaeoeconomists consistently supports it."

We think that this is a convincing statement about the perpetuation of the dominant mainstream of empiricism in the study of prehistoric societies, increasingly concentrating in the direction of locational analysis and model-building.

59. Althusser L-Balibar, E 1970, Althusser L 1977, Blaut J.M. 1961, Stoddard D.R 1981.
60. We have given in previous chapters of the present work many other related examples and references, suffice it to say at this juncture that although the excessive concentration on techniques of analysis may not be as characteristic of the land-man school, nevertheless the methodology of the more "traditional" school is also inverted because there has been little development of their theory, and above all, a strong attachment to the ideological position that the "facts" somehow take on a meaning outside particular conceptual frameworks.
61. For a very thoughtful examination of the ideological underpinnings of human geography see Anderson 1973 and Quaini M 1982.
62. Glassow M.A 1978, Roper D.C 1979
63. Roper, *ibid.*
64. A very useful discussion on the subject is to be found in Harvey's, 1977 article "Population resources and the ideology of science" contained in Peet R 1977, *Radical Geography*. He describes the methodology and the population resources relation and the political implication of population-resources theory by examining and contrasting Malthus, Marx and Ricardo methods. He notes: "Marx utilizes a non-Aristotelian (dialectical) framework which sets him apart from Ricardo and Malthus who, in turn, are differentiated from each other by the use of abstract analytics and logical empiricism, respectively. Each

method generates a distinctive kind of conclusion. Each author also expresses an ideological position..."

65. The neo-Malthusian results of these studies can be traced back to the Aristotelian form in which the question is posed and the answers constructed. And it is of course the ability to depart from the Aristotelian view that gets Marx away from both the short run and long run inevitabilities of neo-Malthusian conclusions. Marx envisages the production of new categories and concepts, of new knowledge and understanding, through which the relationships between the natural and social system will be mediated. This relational and dialectical view of things comes closest to impinging upon traditional concerns with respect to technological change. It has, of course, long been recognized, that Malthus was wrong in his specific forecasts because he ignored technological change. Ricardo saw the possibilities of such change, but in the long run he saw society inevitably succumbing to the law of diminishing returns. For Marx technological change was both internal to and inevitable within society. (ibid)
66. Marx K. Grundrisse. Marx-Engels: Pre-capitalist socio-economic formations: A Collection, Progress 1979.
67. Harvey D 1977. Massey D 1977, Rieser R 1977, Smirnov-Golosov-Maximova (eds) 1984.
68. Meillassoux C, 1975, 1977, 1979
69. Meillassoux ibid and Rey P.P 1975.

70. Kabo V 1979, Tilley C 1981

71. Engels F. The condition of the working class in England.
opening text: To the Working-Classes of Great Britain.