

Causal Powers in the Ecology of Humans

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ABSTRACT Human ecology of persons is sedimented on the ecology of humans as organisms. Ecological relation of persons come to be when people exercise their causal powers thereby releasing the powers of their habitat. Causal powers are liabilities or tendencies possessed, which if exercised, become necessary cause of a consequence. Habitat-people relations are those which people make in their practices enabled and constrained by powers of their habitat. Habitat in these practices is a dwelling place linked with physical space which people interpret as their resource. Independent of the interpretation, physical space considered wasteland or an obstacle tends to recharge soil water reproducing natural ecosystem of the habitat. These ecosystems are resources in the interpretations of people. Habitat is analogous to home-range of animals as long as people have access to their resources. Home range becomes a defended territory in biosphere when dwelling-resource link is interrupted by legal or physical barriers.

Human ecology is concerned with relation between humans and their surroundings. The surroundings are known as environment or habitat. Most of the ecologists use "environment" in the universal sense and "habitat" in the existential sense (Manson and Langenheimer, 1957: 330). Humans in the orthodox ecology are considered passive agents reproducing their relational structure under imperatives of nature, their psyche or a reified culture. The relations are not those of their making but as given by nature and explicable as laws of nature. These conceptions make us barely any different from animals.

The naturalistic approach is right as far as we are biological entities like other organisms. Sedimented on this, however, we are also individuals as persons, capable of having some mentalistic predicates (Bhaskar, 1979). This is the basic argument of Marxian ethnography which treats humans as free agents making their own history. This too, is partial truth. We are capable of taking decisions and acting accordingly but our decisions are constrained by our situations. People make history but not under conditions of their own choice, rather as agents reproducing history as the relational structure constitutive of and constituted by them. This is true of all the relational

structures connected with us, including the ecology of humans. The structure is the relation of our causal powers as persons in conjunction with the causal powers of our surroundings.

Causal Powers of Humans

The ecological relations of persons are those which are made in their practices and exist only as long as these practices are reproduced. In other words, these relations would not come to be unless acts of volition are performed and an act is an impossibility without peoples' power to cause (Bhaskar, 1979). People's powers are realised in their acts as reasons of people-habitat relations. Cause is power to affect a change and act is necessarily a body-movement (including the paradigm case of no act and no movement). People exercise their causal powers in their acts, simultaneously releasing the causal powers of their surroundings and thereby reproducing their ecological relations. Consequences of their act may not be as intended, therefore the relations are partly transformed and partly reproduced.

Causal power is a metaphysical concept (Harre', 1985) and forms the basis of explanation in realism (Bhaskar, 1979). The powers are like the 'natural necessities' in the Kantian Philosophy

(Phillips, 1976). A thing would not be the thing it is without these necessities or the powers. The thing and the power stand in internal and necessary relations with each other. The powers are the liabilities or tendencies which exist but their realisation is contingent upon the configuration of powers in which they exist. These external and contingent relations (Sayer, 1984), which can trigger the causal powers, are the mechanisms necessitating some consequences. These mechanisms, rather than laws of constant conjunctions or sequences, are construed as causal explanation in realism. Explaining the relations of persons with their surroundings requires explicating the causal powers of the surroundings which are released in conjunction with the causal powers of persons as agents of those relations.

What powers do humans have which make them cause of their acts practicing the ecological relations? Conventional theories of action (Collin, 1985) assign cause to purpose. Purpose is seen as the end and cause as the means to reach it. However, human act is neither necessarily purposive nor is purpose essentially a human attribute. I can twitch my muscle, shake my hands without purpose, even though these are not involuntary acts assignable to biological entities. A cat prowling to hunt for mice can be acting on purpose like humans. Therefore, acts done on purpose do not make us superior to other organisms. In both the cases, purpose is, at least, internal and necessary for those acts, but in other cases it may neither be internal nor be sufficient to cause an act. I can move the book on table on request or command of someone else. The purpose, if there is one, is not internal to me. I may wish to move the heavy rock blocking the road but cannot do so unless I get some help. Purpose cannot explain humans as agents of their ecological relations; it cannot be the causal power of humans necessary for releasing the powers of their surroundings.

Roy Bhaskar (1979) traces the causal powers of human agents to their mentalistic predicates, such as desires, belief, emotions, aspirations and so on. These predicates are the tendencies humans are likely to possess. They are possessed

as wants and want is realised in acts. Cognition and connotation are essential pre-conditions for realisation of powers. Persons must have connotation that this is what they want, in contrast to what the wanted thing is not, and the belief that the wanted thing exists.

Cognition and connotation require reflecting on the identity of the thing as self reflection (Taylor, 1985), a peculiarly human power. One can reflect on the identity of the thing wanted without self reflection. Cat hunting for mice as the thing wanted is not reflecting on self. The identification is grounded in the consequences of the acts rather than in the identity of the thing wanted. Self reflection requires a language capable of forming contrasting and evaluating criteria. The language is used for assigning meaning to the thing. The meaning is of the thing, for the subject, in a context that exist in the empirical world (Recouer, 1985: 74-75). The act of assigning meanings is the act of interpretation. All symbolic acts require interpretation to make clear what is grounded in mystery. Interpretation is assigning meanings. Meanings are context bound and the context is for a subject. Interpretation of a context is evaluation of the situation which are *sui-generis* and are in the experience of the subject *qua* subject.

The context is the situation as it appears to the subjects experiencing it. In the realist argument the appearance is what the subject is experiencing, therefore, it can only be that of the real (Sayers, 1985: 40-41). The manifestations of the surroundings 'shine-forth' as the appearance. The thing in itself shows its face to us as the thing-for-us. It becomes our 'brute data' (Taylor, 1985) which we use for evaluating our situation. In the hermeneutical conceptions the things involved in our acts are only those as we interpret them. In the realist argument, our interpretations give us beliefs as the causes of our intentional acts but the consequences may not be as intended because the causal powers of the things exist independent of our interpretation.

The Manifestations of a Habitat

How is the surrounding manifest to people

practising their ecological relations? People, in their interpretations, live in 'places'. According to the conceptions in biological ecologies, organisms live in places as 'conditions' related to their ontogeny (Mason and Langenheim, 1957). Each condition ranges from a lower to an upper threshold. The range is the environmental gradient. All the gradients related to the ontogeny of the organism can be bundled together as the 'environmental spectrum' or the 'environment' of the organism. The position that the organism occupies along the gradients is its 'habitat, the 'place' where the organism lives (Odum, 1971).

The 'conditions' and the 'habitat' are observed in some time-space framework but are rendered aspatial and atemporal in the biological conceptions of 'place'. The implicit assumption is that space is what exist in substance; therefore, is reducible to the latter. Field ecology acknowledges the existence of physical space as the circumscribed habitat but space is separated from substance and caste aside as inconsequential to the ontogeny of the organism. Can organisms, like other substances, live without physical space?

Physical space is the necessary condition for living of humans. We can position all organisms along some environmental gradients in thought, but they live in physical space in the real world. Habitat as the 'condition observed' refers to the surplus element of physical space added to the other conditions we ascribe to an 'environment' (Mamatamayee, 1989). Physical space is the medium and outcome of acts of people practising their ecological relations. The physical space of their surroundings is substantiated in their practices. As a substance, habitat is a container holding people, and their belongings and also the medium of some of their acts. Space is 'objectified' as a place. Habitat as the condition observed 'impinges' on the ontogeny of the organism (Mason and Langenheim, 1957), but habitat as the 'place' of living exists in the practices of the people. The causes of their practices are the causal powers of the substantiated habitat as is manifest to people.

The substantiated habitat has the causal power to anchor people and their belongings. We anchor

ourselves at our place of rest (Mamatamayee, 1989). We stock and replenish our energy required by body movement at our dwellings. Habitat as dwelling place is essentially a relatively firm and level ground, or which can be levelled and secured firm. Plains or plateau surfaces with small angles of slope are not necessarily either level or firm. The physical space is made rugged with stumps of trees, bushes or tall thorny scrub, though grassy surfaces even on sloping land can be interpreted as 'plain'. Physical space made rugged by vegetation may need repeated clearing, such as in swidden cultivation, or is 'developed' by levelling, such as in urban developments. Clearing of vegetation may not be essential if its surface is level. Grassy surface is always level enough, but umbrella-shaped trees with main branches running almost parallel to each other and perpendicular to the main trunk can be used for raising tree dwellings.

A level ground does not have power to cause a dwelling place unless it is in conjunction with the firm surface. Surface may be made firm by nature otherwise it must be fixed with some support structures, such as tied with ropes, or raised on plinths and foundations, or made firm as a float in a watery surface. Conjunction of firm and level surface may not be wide spread even in valleys, where people require, various innovations to make it so, while beauvacs as dwelling places can be wide-spread in high mountains.

Firm and level surface is necessary but not sufficient condition for releasing the causal powers of physical space making of a dwelling place. We may be anchored in air or water, as in an air craft, or in a sub-marine, but these anchors are not dwellings. Dwelling as an anchor is not what is for some fleeting moments but what is relatively enduring. Mountaineers pitching tents *en route* to an expedition do not practice dwelling-habitat relations unlike the nomads pitching tents while on transhumance. Tents may be equally enduring in both the cases, but dwelling place of the mountaineer is not enduring enough to build the ecological relations.

A living-place of relative endurance is one that has power to sustain the anchorage. Physical

space, in addition to container is also substantiated as a medium of acts which necessitate and result in persons being anchored at their dwelling places. As medium, people use their physical space as resources and as mediating channels to reach them. Resources is one that is set in the context of people's social practices. It is the physical space with 'site' characteristics (Faludi, 1987) or place with 'location', (Agnew, 1987). Resource essentially has a scarcity attribute and allocative problem in people's interpretation, but is always a thing of use. Physical space of the habitat not in use as dwelling, resources or channels is either a waste land or an obstacle in people's interpretation. Wasteland may be neutral, while obstacle distances people from their resources. However, both the wasteland and the obstacle may be used as the medium in acts of people, independent of their knowledge.

The physical space of a habitat understood as a wasteland or as an obstacle has causal powers to sustain anchorage as medium of people's act, holding soil water and its recharge area. Sandstone mesas and sand dunes of hot deserts are typical examples of this. Water moving through pores of rocks and soils particles feeds to ground aquifers and to soil water. It is drawn up by natural or cultivated plants. People use plants as resource either directly or indirectly by sharing the ecosystem with other organisms. People living in mountainous habitats descend by hundreds of feet for surface water and undergo a number of hardships but continue to live there as long as the physical space of their habitat is wet enough to raise crops, forests or pastures. Availability of soil water is highly dispersed in rocky and sandy deserts, habitat appears highly perforated with dispersed and temporary dwellings. Surface water is always alluding in these areas but dwellings seek conjunction with soil water. Location of huts shifts with receding soil water.

Home-range and Territory

The habitat as a place of living in the interpretation of people is only what they understand as their dwellings, resources and channels linking them through soil water and its recharge area

is also built in their practices. Habitat is thus analogous to 'home range' of animals, the area of daily movement or most frequent visits. Home-range operates at organismic level of humans requiring free access to all the conditions essential for biological requirements of humans.

However, unlike the other organisms, humans have land titles to the physical space of their habitat. They are as free to use their land as the controlling authority would allow them to use (Faludi, 1987). People can try to convert wasteland into a resource, even if as a dumping ground for refuse, or use the obstacles in some way, such as by constructing a road through it. These acts or physical or legal boundaries can cut off access to the conditions essential for organismic or social needs of humans. Need to defend home-range arises. Habitat becomes a segmented physical space interpreted as 'territory' of a homeland thereby territorialising the entire biosphere.

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