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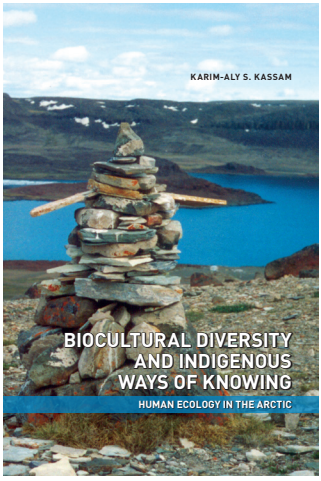

BIOCULTURAL DIVERSITY AND INDIGENOUS WAYS OF KNOWING: HUMAN ECOLOGY IN THE ARCTIC

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CHAPTER 7

Implications of a Human Ecological Outlook

In the twenty-first century human ecology has the potential to be the 'third culture' linking the sciences and social sciences. The obstacles to the development of this third culture are disciplinary self-interest and a fragmented understanding of human interaction with the environment. The examples cited in the preceding chapters show that the relationship between the biological and the cultural is best observed through a human ecological lens. The analytical elements of a human ecological lens include: context, perception, diversity, relationships, and knowledge generation (chapter 3). Human ecology is necessarily interdisciplinary because it examines complex and interacting systems. It has the ability to meaningfully inform a wide variety of cross-cutting issues of societal concern which are as diverse as climate change (chapter 5) and land use rights (chapter 6). It is a fully functional bridge between the biological and the cultural.

At the end of a narrative, we often ask: what is the moral of the story? In this case: what are the practical and theoretical implications of this research? In human ecological research theoretical and practice applications cannot be separated. There are five fundamental pillars on which this work rests. They are (1) the case for diversity (section 7.1); (2) the humanitarian paradigm of knowing – *phronesis* (section 7.2); (3) the participatory approach to the validity of research (section 7.3); (4) the role of human agency in mediating cultural systems, social structures, and individual actions to

transform perceptions (section 7.4); and (5) the argument that maintains that the universal may only be approached through the particular (section 7.5). These five points are summarized below.

7.1. Case for Diversity

Diversity is the basis of sensory perception, and it is this characteristic that unites humans with all other organisms. Diversity defines our humanity and moulds our reality. Human beings are not impartial observers of the natural world but participate in it, utilizing mind and body. This participation is characterized by relations with other humans, non-human life such as plants and animals, and inanimate entities. Context provides the basis for these relations. Context is a story, a narrative, a pattern that reveals meaning of these relationships. Human ecology, as a narrative, interprets the particular and speaks to the universal by showing how small facts shed light upon large issues.

At the biological or cultural level, it is important to keep in mind that in order to tinker, evolution needs all the parts. This simple proposition makes a profoundly significant case for cultural and biological diversity. By placing human ecology within a northern indigenous circumpolar context (where it may have been least expected) this work demonstrates the significance of diversity. The human ecological example of the Inuit of Ulukhaktok illustrated the complex interconnectivity of relations between biological and cultural diversity (chapter 4). The case of climate change in Wainwright shows how those diverse relations between the biological and cultural are in peril (chapter 5).

7.2. A Humanitarian Approach to Knowing

Knowing is embedded in direct experience of the senses and therefore, within specific contextual relations. Relationships are, therefore, the basis of knowledge. This type of knowing is *phronesis*, or reflexivity in action, where self-reflecting humans interpret the consequences of actions. *Phronesis* is a dynamic process involving a circuit of knowing *how*, learning *how*,

and knowing *that*. It is the iterative movement from context-dependent, experiential knowledge to context-independent, imparted knowledge and back to context-specific learning that makes knowledge generation in human ecology relevant to both theory and practice. In other words, it is approaching the universal from the particular.

For instance, the subsistence hunting lifestyle of the Inuit of Ulukhaktok (chapter 4) and the profound knowledge of sea-ice of the Iñupiat of Wainwright (chapter 5) illustrate knowing *how*. They provide the context for knowledge generation. Knowing *how* is a dynamic process where action and reflection are not separate for the subsistence hunter and gatherer but a simultaneous performance. It is one *intelligent* act. For the researcher to critically follow and learn *how* is a step in the transformation of the relational nature of knowledge to the researcher. The knowledge undergoes a process of generalization from the particular to the universal. The researcher undergoes transformation in perception in the other direction, moving from the general to the particular. The act of documenting this knowledge (chapters 4 to 6) completes the transformation into knowing *that*. The representation of Inuit, Iñupiat, or Sami knowledge in the form of mapping human ecology (chapter 6) is a manifestation of knowing *that*. However, that knowledge has a history, a process that led to it. Engaging that knowledge is the first step to learning *how*, thereby returning back to the context of knowledge generation.

7.3. Participatory Approach to Research and Validity

Because human ecological relations are inherently participatory, human ecological knowing is also relational and participatory. Furthermore, research about knowing also has to be participatory. The analytical lens of human ecology informs both the understanding of the relationship between the biological and the cultural and the method by which to reveal these relations. It is by definition context-specific and therefore may only be examined on a case-by-case basis. The research sites are the location and locality, condition and conditionality from which we can understand the relationships between the biological and the cultural.

Phronesis, or practical wisdom, encompasses different ways of knowing. These forms of knowledge have concomitant forms of validity. Most importantly, the process must be participatory to be considered genuine *phronesis*. Those who know determine what is known. The value of a community's knowledge is realized when it is shared meaningfully through participation in and contribution to the direction of research. Knowing, *phronesis*, is context-specific and anthropocentric at its generation, which makes the community a full partner in human ecological research.

When knowledge arises from knowing *how* to live from the land and sea as in the case of human ecology of Ulukhaktok and Wainwright, its validity is conferred by *communities of social practice*, that is, the subsistence hunters and gatherers. They are the experts who collectively confirm the validity of their knowledge. When knowing *how* is transformed to knowing *that* and made mobile by the researcher so that it is generalized, only then can *communities of inquirers*, experts, namely other researchers living elsewhere, comment on its validity based on their accumulated knowledge. Experiential context-dependent knowledge necessarily depends on *communities of social practice* for its validity, and imparted context-independent knowledge, being mobile, depends on validation by *communities of inquirers*.[1] In Galileo's experiments, for instance, validation by *communities of social practice*, that is, craftsmen, would have been prompt because they were present. He worked and spent considerable time with artisans in their workshops. However, validation by *communities of inquirers*, as we know, was much more time consuming because first there needed to be a paradigm shift from the generalized knowledge of that period, namely Aristotelian physics. This is not only an issue of the relational nature of knowledge but also the relational nature of power as discussed in the case of mapping Sami, Inuit, and Iñupiat human ecology (chapter 6). The case study of mapping human ecology illustrates the transformation of knowing *how* by *communities of social practice* to knowing *that* by *communities of inquirers*. The resulting map is then used by the community of social practice to reflect on its traditional practices and so its knowledge. In turn the community of inquirers use the map to reflect on their knowledge. Both groups are transformed by both the exercise of applied action research itself and the knowledge that is gained. Mapping human ecology influences both

communities in their practice and in the power relations that result from this knowledge.

7.4. Human Agency and Transformation

Power is relational. It is exercised, not seized. Therefore, power relations are not external to human ecological relations but embedded within them. Humanity has extra-genetic mechanisms for governing behaviour, and this agency produces social change. Learning *how* is an important element in facilitating a change in perception and therefore the first step in creating change through human agency. The individual case study provides access to context-dependent knowledge and facilitates learning *how*. The case study approach was central to Galileo's experimentation on gravity as well as development of Darwin and Wallace's contribution to the theory of evolution. The case study has also been central to understanding human ecology.

The two cases of the Inuit community of Ulukhaktok (chapter 4) and the Iñupiat of Wainwright (chapter 5) illustrate the process of *living through* change and how the diversity of indigenous cultures is sustained. The examples of these communities show the application of *phronesis*, practical wisdom, to secure the ends of human life (knowing *how*). These case studies also demonstrate that *phronesis* integrates their *cultural system* by informing the *social structure* in which they operate and which is also manifested in their *individual actions*. In the case of the Inuit of Ulukhaktok, through the value of *sharing*, the community has so far avoided potential conflict arising from their cultural system and dramatic change to their social structure resulting from its penetration by the values of the market economy (see figure 7.1). In the case of the Iñupiat, sharing as a value has created a synthesis between their *cultural system* which co-exists with a *social structure* impacted by the market economy. However, the adverse impact of climate change may drive a wedge between their *cultural system* which values sharing and the *social structure* which facilitates it. The outcome is by no means certain as the community has consistently demonstrated its resilience through the capacity to adapt under conditions of dramatic change.

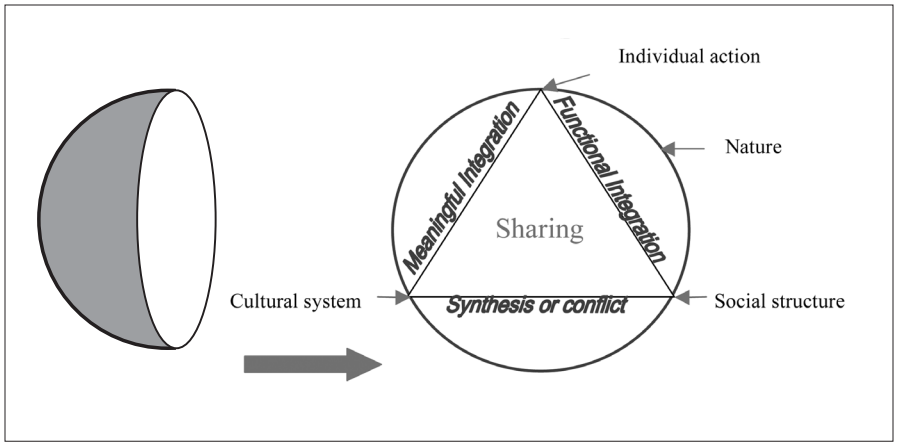

Figure 7.1: Dissection of Human Ecological Relations.

As explained in the previous section, human ecological mapping (chapter 6) has the potential to generate a double hermeneutic, a reflexivity, which produces a change in perception of individuals. This communicative nature of the map is displayed in its ability to gain agency for its makers and to realign power and knowledge relationships. The human ecological map corresponds to an assemblage of both indigenous as well as Western cartographic knowledge – a combination of elements that provide a unique metaphorical representation of knowledge. The transformation of knowledge in order to communicate across cultures engenders a shift in perception and, potentially, in power relations. The shift occurs when reading the map and drawing from its communicative power – learning *how*.

This model (as represented by figure 7.1) points to the capacity of human agency which is the reflexivity of human societies through *phronesis*. The example of circumpolar societies in the face of dramatic change is informative particularly in terms of conservation of cultural and biological diversity. At a global level, it is also informative in the context of the relations between nations and the variety of cultures and creatures that live within their borders. Pluralism and conservation as values may provide a useful synthesis between diverse cultural systems and diverse social structures, thereby leading to preservation of biological and cultural diversity for

the benefit of all humanity. Just like sharing for the Inuit and Iñupiat, the value of pluralism may be central to conservation of biological and cultural diversity on this planet.

7.5. Approaching the Universal through the Particular

Knowledge is contingent because *idea* and *action* are combined. This has significant implications for research because it means that cosmological and empirical considerations are not separate. If theory and practice are separated they become vacant because they are divorced from their context. This is particularly true of human ecological understanding. An understanding of the whole may only be approached through the particular. It is the expansive multiplicity within the particular that determines the life and death of theories or cosmologies. If the different taxonomies of all the diverse cultures and all the diverse species of life were known, categorized, and permanently established, human agency would be stale and fossilized.

It is on this note of unity through diversity or knowing the universal through the particular that this narrative concludes. In the absence of adequate prose to express this idea, one seeks refuge in metaphors found in poetry. The Persian Sufi poet, Farid ud-Din Attar, composed *Manteq at-Tair*, translated as *Conference of the Birds* (1984), in the twelfth century. Among the key themes he addressed is the relationship between diversity and unity and approaching knowledge of unity through diversity. He tells the story of all the birds of the world seeking their King, whose name is Simurgh. At first all the birds decide to make the journey to find their King – a journey that is not unlike the one undertaken through the seven chapters of this work. Once they discover the difficulties associated with the journey, the prominent birds like the hawk, peacock, heron, owl, and nightingale make excuses. Ironically, it is not necessarily the stronger birds that complete the journey. The journey involves travel through seven perilous valleys helped by a guide and leader, the Hoopoe. He explains the journey to the birds.

> The first stage is the Valley of the Quest;
>
> Then love's wide valley is our second test;

The third is Insight into Mystery,

The fourth Detachment and Serenity –

The fifth is Unity; the sixth is Awe,

A deep Bewilderment unknown before,

The seventh Poverty and Nothingness –

And there you are suspended, motionless,

Till you are drawn – the impulse is not yours –

A drop absorbed in seas that have no shores (Attar 1984: 166).

The point that he is making concerns knowing in an experiential manner, as learning *how*. Out of the many thousands of birds only thirty survive to complete the journey. Before arriving at the court of Simurgh they cross the valley of Unity.

Next comes the Valley of pure Unity,

A place of lonely, long austerity,

And all who enter on this waste have found

Their various necks by one tight collar bound –

If you see many here or but a few,

They're one, however they appear to you.

The many here are merged in one; one form

Involves the multifarious, thick swarm

(This is the oneness of diversity,

Not oneness locked in singularity);

Unit and number here have passed away;

Forget for-ever and Creation's day –

That day is gone; eternity is gone;

Let them depart into oblivion (Attar 1984: 191).

The birds finally discover Simurgh, their King. In Persian *si* means thirty and *murgh* means bird. The play on words is that the journey is completed by thirty birds (*simurgh*).

There in the Simurgh's radiant face they saw

Themselves, the Simurgh of the world – with awe

They gazed, and dared at last to comprehend

They were the Simurgh and the journey's end.

They see the Simurgh – at themselves they stare,

And see a second Simurgh standing there;

They look at both and see the two are one,

That this is that, that this, the goal is won.

They ask (but inwardly; they make no sound)

The meaning of these mysteries that confound

Their puzzled ignorance – how is it true

That 'we' is not distinguished here from 'you'?

And silently their shining Lord replies:

'I am a mirror set before your eyes,

And all who come before my splendour see

Themselves, their own unique reality;

You come as thirty birds and therefore saw

These selfsame thirty birds, not less nor more;

If you had come as forty, fifty – here

An answering forty, fifty, would appear;

Though you have struggled, wandered, travelled far,

It is yourselves you see and what you are' (Attar 1984: 219).

…..

The substance of their being was undone,

And they were lost like shade before the sun;

Neither the pilgrims nor their guide remained.

The Simurgh ceased to speak, and silence reigned

(Attar 1984: 220).

Human ecological research can find its spirit in this poem. That spirit points out that the community of inquirers (the birds) and communities of social practice (also birds) can find their grail (the king) in the search, the journey. When the two communities work together in mutual respect, the knowledge generated transforms both. The practice of inquiry into the practice of *living through* transforms what was divided and diverse into something that is united and whole. Expressing that wholeness is the essence of human ecology.