

The Significance of 'Special Ways of Knowing' for Environmental Education

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Introduction

Attempts to model the learning process in environmental education were seriously pursued during the latter part of the 1970's (Greenall Gough 1993) and became a preoccupation with many researchers during the 1980's. This article which contributes to this body of research reports on a study undertaken between 1988 and 1994 (Mahony 1994). The project focused on a process antecedent to the above model, namely the manner by which a person comes to understand and relate to his or her environment, on the premise that a viable environmental education should be based on this foundation.

This study of an adult rural population in the Wollombi Valley of NSW, Australia, combined a contextual historical survey with a qualitative field study derived from an interpretivist paradigm. It identified four intuitive and experiential ways of knowing which constituted well defined ideologies and for which the term 'positions' was adopted to convey an idea of their existential and entrenched character. The positions were designated Men of the Land, Earth People, Other Agenda Folk and Unaligned Individuals.

For the nonformal environmental education of the adult rural population which was the subject of this study, this research suggests that collaborative government policies seeking to address environmental problems such as land degradation and declining water quality will have little chance of success while they rely on a one way transfer of knowledge derived from a positivist paradigm. The entrenched nature of subcultural positions identified in the Wollombi study indicates the use of complementary critical and interpretivist methodologies such as critical ethnographies and focus groups.

For formal environmental education, and schooling in particular, the hypotheses derived from the Wollombi research indicates revised understandings of the attitude concept and the importance assigned to non cognitive experience. The postulated existence of powerful contextual ontologies, epistemologies and ethical values in students emphasises the importance of interpretivist methodologies in achieving the values education and action research aims typical of contemporary Australian environmental education curriculum statements.

Background

To establish an appropriate context for the field research, a comprehensive literature review was conducted. This writer found the literature most explicable in terms of an imperative to search for a signature methodology which characterises environmental education. This search imperative is apparent in the discipline's foundation narratives where the pioneer researchers undertook a 'search for definitive models or definitions or descriptions of environmental education... or for what could be called the 'one true story' (Greenhall Gough 1993, p.36). This orientation continued with the subsequent preoccupation with the knowledge—attitude—behaviour model, which included an internal transfer of attention from attitude to behaviour (summarised in Hungerford and Volk 1990), and the contemporary interest in alternative paradigms (Robottom & Hart 1993).

Interest in the paradigm concept has proved timely for environmental education. Firstly, it has provided a tool for systematically examining the degree of correspondence between methodology and ideology which has proved so worrisome to many commentators in regard to research (e.g. Robottom 1992) and teaching (e.g. Maher 1986b). Secondly, writers have been able to take advantage of the paradigm's analytic framework to embark on a systematic and detailed exploration of the ontological (e.g. Fox 1990, Mathews 1992), epistemological (e.g. Van Matre 1990, Gough 1987) and ethical (e.g. Nash 1990, Birch 1993) components of ideology which link it to its methodological expression. As such, it provides a pathway for closing that 'rhetoric—reality gap' (Stevenson 1987) so frequently lamented.

As the reference dates indicate, this development has only occurred over the last decade or so, and the alternative paradigms reviewed have yet to have widespread research application. However, some trends are already evident. Researchers have chosen to utilise the critical paradigm more than the interpretivist, apparently seeing the former as of more practical relevance to the social transformation objectives of environmental education. But this paper argues that an interpretivist stance is a necessary illuminating component of successful critical theory in the same way as the critical viewpoint supplies the context in which an interpretivist environmental educator must work. The two paradigms should therefore be seen as complementary.

A second trend relates to environmental education in a formal, and specifically a 'schooling' context. Although there are some positive results from the application of the critical paradigm in schools (e.g. Greenall Gough and Robottom 1993), such instances must be rated as 'projects' or 'case studies' rather than part of the school's core curriculum. The marginalisation of environmental education (Maher 1986a) which has characterised its inclusion in school based education is

fundamentally unchallenged. There is still a basic incompatibility between the ideology of contemporary schooling and that of the newly articulated environmentalism. The attendant argument which has yet to be explored concerns the appropriateness of a concentration of attention on formal education (as schooling) relative to non formal and informal education. The Wollombi research supports the point of view that the non institutional pathway offers greater possibilities for value and behaviour modification because it is not handicapped by the cultural reproduction ethos of schooling.

These recent changes in thinking and research have resulted from an extension of interest by environmental educators into mainstream education and across discipline boundaries. In terms of this researcher's interest in explicating the manner by which a person comes to understand and relate to his or her environment, cross disciplinary reading proved most rewarding, given that attempts to model the process using reductionist models of discrete psychological entities have found multiple variables and elusive relationships producing a daunting prospect of increasing complexity (Hungerford & Volk 1990, Murphy *et al* 1991).

But researchers in Human Geography, Environmental Psychology, Cultural Psychology, Nursing and Anthropology have pursued a variety of other pathways aimed at explicating human ways of knowing. A full discussion of the author's cross disciplinary survey is not possible within this context, but is available elsewhere (Mahony 1994). In its place a summary of those findings pertinent to a study of environmental knowing is presented:

1. The reality environmental educators are concerned with is a purposively constructed, personal one.
2. Incoming information is selectively processed according to one's culture, personal history and present disposition.
3. Habitual orientation, rather than conscious decision making, influences environmental behaviour.
4. Environmental knowing is characteristically affective rather than cognitive.
5. People adopt well defined positions in regard to environments, variously termed traits, preferences and dispositions.
6. A cultural group can be distinguished by its collective consensus about meaning.
7. Ethnographic techniques provide a proven holistic and phenomena focused method of appreciating how people understand their environment.

The field study described below was designed in the light of these findings. In particular, the representation of environmental knowing as personally constructed, habitual, affective and culturally conditioned, suggested the adoption of the consciously unobtrusive ethnographic evaluation methodology, aimed at achieving insider understanding with minimum disturbance of holistic connectedness.

The Wollombi Study

An adult rural population in Australia was the focus of this research. The Wollombi Valley is one of the tributary catchments of the Hunter Valley in New South Wales (Map 1). It has a clear regional identity and environmental history, and an appropriate size (1738 square kilometres) and population (approaching 5000), for the purpose of this field study.

Preliminary historical research, drawing on both primary and secondary sources, was undertaken to provide a historical–geographical context. The field research component utilised ethnographic evaluation, a variation of ethnography designed to assess the significance of the observations to the educational context (Fetterman 1989a, 1989b). Three techniques were used:

1. In–depth interviewing of 35 subjects spread across subcultures and throughout the Valley catchment.
2. Participant observation, focused on two community organizations: Wollombi Valley Progress Association and Wollombi Valley Landcare Group Incorporated.
3. Documentation studies, utilising two sources: the minutes of the Wollombi Valley, Bulga–Milbrodale and Quorrobolong Progress Associations, and two local news publications—The Valley Voice and Our Own News.

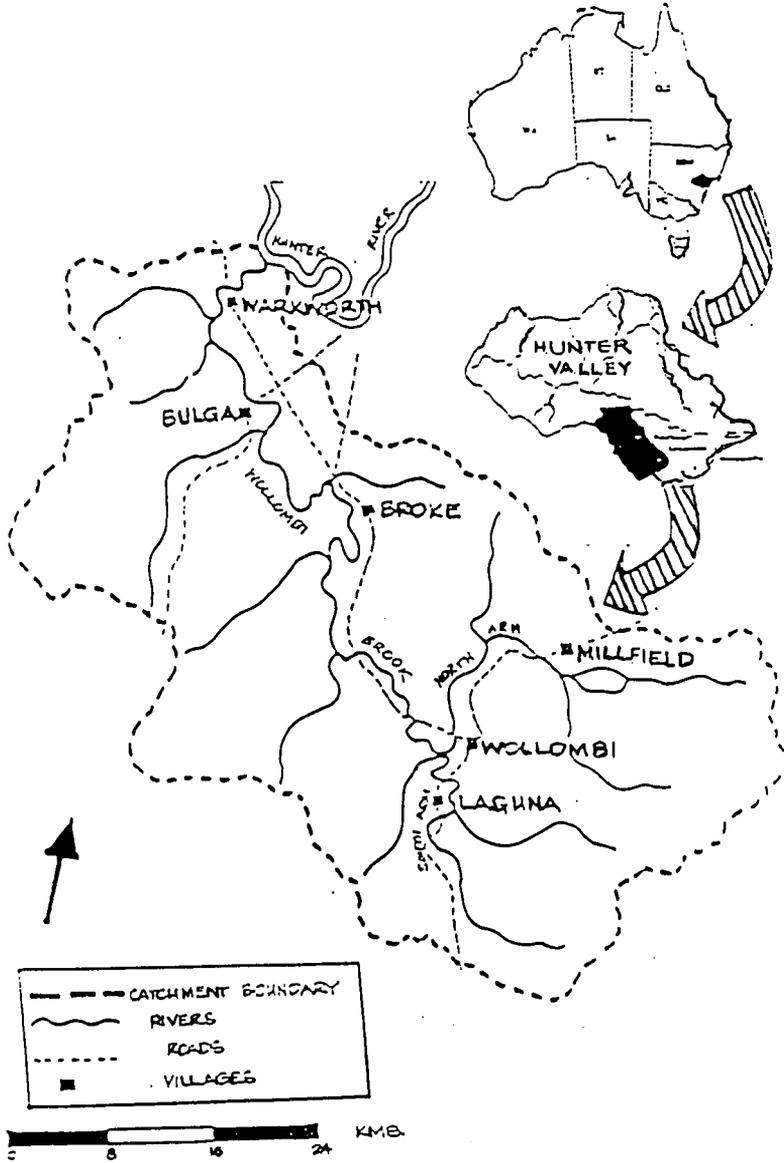
The end result of this research and the answer to the question put at the outset, presents an adult rural population with intuitive, experiential and compelling ways of environmental knowing. The term ‘positions’ was adopted to convey the notion of their entrenched worldviews, arrived at via folkways, and associated with scripts suggesting entrenched, compulsive folkwisdoms.

The positions

The assigning of individuals into positions was based on three criteria:

1. The adoption of a distinctive environmental worldview in terms of characteristics identified during the interviewing, observation and documentation process.
2. The identification of distinctive folkways along which they travelled to their present positions. These variously included birthplace, family upbringing, formal and informal education, occupation and significant life experiences.
3. The manifestation of a particular cognitive style, method of communication and character traits.

Map 1



THE WOLLOMBI VALLEY

These are detailed in the following accounts of the four positions.

Men of the Land are predominantly male and are products of a family tradition of farming and logging extending through at least three generations. They are also part of extended families within the region and all own larger acreages. Generally they failed to complete their formal education, often leaving school at age 13 or so to complete a traditional apprenticeship on the family dairy farm.

Eight elements make up the distinctive viewpoint of the Men of the Land.

1. They believe that *the land should remain productive*.
2. Long established and '*correct*' *landcare practices* should be followed.
3. They are deeply concerned at having to *cede authority* to new settlers, Bush Fire Authorities, National Parks and Wildlife Service and environmentalists.
4. *Wildlife* can be distinguished into acceptable natives, and 'vermin'.
5. *A contentment with rural living*.
6. *A nostalgia for the old ways*.
7. *An awe of an aroused nature*.
8. *A suspicion of, or antipathy towards, environmentalists*.

Men of the Land think in concrete rather than abstract ways. They talk about real landscapes and events. Theories, philosophical viewpoints, intellectual arguments are not their concern. They convey the impression that their viewpoint is methodically constructed from building blocks of notable events, experiences and folk wisdom. Their thinking is strongly experiential rather than acquired through reading or hearsay.

Narrative figures prominently in their communication, interspersed with parcels of folk and personal wisdom. Their language is pictorial and sometimes graphic ('the mountain gave way', the river 'tore the head out of the valley', that's 'blackfellow, mongrel country', the grass is green but 'has no guts in it'). they are affective in a selective and controlled way, e.g. expressing joy in productively farming, scorn at pretenders to real landuse authority, sadness at the way the country has 'gone back', awe at a fierce nature. They are generally quietly spoken, sure of themselves, without being assertive.

Finally, these are men of recognisable character traits. They espouse the old values of family primacy, community responsibility, loyalty and generosity. They are generally tolerant of people and ideas different to their own. They 'hang in there' with regard to their traditional lifestyle, to the point of tenacity. They believe that hard times build character. They are also pragmatic (new people need to arrive, animals need to be culled) and shrewd (they have understood the commercial value of land).

Earth People contrast strongly with Men of the Land. They are predominantly female, are an average of 15 years younger, originate from

outside of the Valley, profited more from formal education, are passionate about their beliefs and tend to be intolerant of opposing viewpoints. They think and communicate differently and manifest such opposed character traits as to necessarily irritate Men of the Land.

All have participated successfully in formal education and use the skills obtained to keep informed about the issues which concern them and to formulate the required responses. Dealing with bureaucracies, writing letters and articles, lobbying support and organising meetings seem to come easily to these folk.

Each is a refugee from urban living. Feelings of abhorrence about environmental degradation or diminished quality of life resulted in a conscious decision to move to the country.

Eight elements can be identified in the well defined viewpoint of these people.

1. They are *committed conservationists*.
2. Earth People have definite ideas about what constitutes *appropriate land use*, which contrast strongly with the practices of traditional farmers.
3. Earth People are unapologetic *social critics*.
4. Earth People are *prepared to make a stand* for their beliefs and support 'causes'.
5. Generally they prefer a *simpler lifestyle*.
6. They see the Wollombi Valley as a *special place*.
7. Earth People share with Men of the Land a *protectiveness regarding the lifestyle they can enjoy in the Wollombi Valley*.
8. They feel an *empathy with Aboriginal culture*.

Earth People have a cognitive style which has links with both their educational background and their ability to reflect upon their experiences. They are as happy with intuition as with logic. They are comfortable with ideas and with both analytical and generalising exercises, but they tend to focus on particular issues and fall quickly into a protagonist stance. They are articulate and at times forceful in their communication, impelled as these are by strong convictions and passionate feelings. Nevertheless, in debate they meet opposition with reaffirmation and persistence more than with confrontation.

The traits which can be readily attributed to Earth People are these. They are recognised in the community as people of strong beliefs who are prepared to stand up and be counted. This commitment is reflected in their style of living and their involvement in community organisations and events. They are intolerant of opposing ideas and value systems. They persist.

Although *Other Agenda Folk* are the most recent settlers, they are now the most populous group in the Valley. Of varied age, personality and background, these people are united by possessing new visions of what the

land can do, by their considered decisions to settle here, and by their purposeful efforts to reshape the countryside. There is also a degree of detachment from the land unknown to Men of the Land and Earth People.

The decision to take up land in the Wollombi Valley was made by each of these people within the last two and a half decades. Sometimes the decision was not made directly by the person, but as part of a marriage or membership of a religious community. Many were business people, some were from the professions and most see the Valley as their place of retirement. This decision usually had its roots in powerful life and career experiences and is usually framed in terms of an ideal or 'dream'. The effect of this on landuse has been in the nature of concentrated efforts to mould the country into the shape of that dream.

Seven elements contribute to the viewpoint of Other Agenda Folk.

1. *They see the land from a more objective, detached viewpoint.*
2. *The way they use their land is intended to reflect the weighty reasons that brought them into the Valley.*
3. Other Agenda folk tend to have a more *matter-of-fact view of nature.*
4. These people believe that *their goals will only be achieved if they make them happen.*
5. *Their attitude towards the local community tends to be critical and utilitarian.*
6. Other Agenda Folk readily recognise *the importance of significant life experiences* in bringing them on to the land.
7. They acknowledge their *apprenticeship in working the land.*

Other Agenda Folk are clear thinkers. They outline their viewpoint methodically and analytically. They readily reflect upon their experiences and give the impression of having worked it all through beforehand.

It is easy to converse with Other Agenda Folk. They are comfortable with discussions about what they are doing on the land. They speak lucidly and with authority. They need few prompts. They have a characteristic mix of a matter-of-fact, business-like approach, and an experiential, intuitive component. As a group, they are characterised by qualities of resourcefulness, initiative and determination. They know where they are going. They draw their strength and inspiration from their success in education and career and from the commitment they have made to their goals in life. They are 'formed' people who have made their decision. For contemporary Wollombi society, these are the doers.

Two characteristics distinguish *Unaligned Individuals*: non-association with a group position and pronounced individuality. Most come from a farming tradition, but work experiences, education, environmental or other agenda interests have caused them to disengage from the communal folk-culture of Men of the Land. It is a case of personal life experiences overwhelming those of a communal nature.

Their individuality is expressed in the importance each assigns to his own history and way of doing things. There is also a group of character traits: determination, toughness, personal expertise and strong convictions. Although nearly all are male, there is evidence of influence from a female partner in each instance, sometimes supporting, sometimes tempering or blocking.

Unaligned Individuals hold these characteristics in common:

1. These are people of *strength and individuality*, not to be taken lightly.
2. *Personal histories* are important to Unaligned Individuals, commonly telling of hard-won victories over adversity.
3. These are *people of action*, are accustomed to making things happen in the face of difficulties.
4. All are *self-taught*. This is sometimes literally true and at other times through internalizing school or career experiences.
5. These are people of *firm convictions*.
6. Unaligned Individuals *identify with the land* in its productive mode.

Unaligned Individuals have developed an independent way of thinking which is closely linked with their personal life experiences. While they happily focus on particular issues, these fit into a more general configuration of how the world operates. Their strong critical sense arises out of the contrast between this and other perceived viewpoints.

Initially cautious, Unaligned Individuals soon warm to the task of explaining what they are about. Their language is often strong and colourful. They 'call a spade a spade'. They use irony and metaphors to make points, and produce some memorable expressions. They favour a narrative style.

Somewhat dour, these are people of personality and character. They have blazed their own trail. Their strong convictions can amount to 'sets' against government, unions or whatever group has aroused their ire. But few would take them lightly.

Discussion

The Wollombi study portrays rural landholders as having 'special' ways of knowing (or 'positions') with regard to the land. These are contextual, holistic, intuitive, experiential, value-laden and behaviour-oriented. This contrasts with traditional assumptions of environmental education about a definable body of 'correct' knowledge that is transferable, reductionist, reasoned, expert-derived, and essentially separate from attitudes and behaviour. This discussion will begin by offering some general reflections on the character of these distinctive epistemologies. It will then address three particular implications for non-formal and formal environmental education.

The contextuality of each position usually finds expression in the

form of the folk wisdom assembled and uttered by its members. This is reinforced by a coincidence with personal experience, except in the case of unaligned individuals, for whom personal experience is the dominant and divergent influence. Perceptions of the land occur through the template of 'value sets', are assimilated into recognisable character traits and expressed through distinctive cognitive styles and methods of communication.

The world view of the Men of the Land and each of the other positions is holistic in an existential way. That is, each position represents an orientation of the total person, a way of being towards the land. While it is conceptually possible to analyse this in terms of particular forms of knowledge, beliefs, attitudes and behaviours, to equate the sum of these with the totality of each position would conflict with this fundamentally holistic existentiality, so apparent in the interviewing, observation and documentation process.

Observation of contested issues at Progress Association and Landcare meetings indicates an intuitive way of knowing. The processes of stream erosion, correct farming practices, the appropriateness of cattle to the Wollombi landscape, the role of fire as a land management tool, and the damage done by wombats are presented as self evident truths by Men of the Land, just as opposing positions are instinctively put in each instance by Earth People. Other Agenda Folk are candidly ignorant, their intuition focusing on the rightness for them of a country lifestyle—the details they will work out in due course. The researcher may think it important to trace antecedents, but such analytical and cognitive pathways are of little interest to most Wollombi landowners, secure in a conviction of naturally belonging, not only in a geographical place, but also in an environmental position.

There are also some more specific implications of the Wollombi study for environmental education research and practice.

1. The concept of attitude has been adopted in environmental education as a 'central device for explaining and predicting behaviour' (Fishbein and Aizen 1975, p.v) or at least a significant determinant. In much of the Knowledge—Attitude—Behaviour model research it has been hypothesised, or assumed, that attitude has a pivotal role in translating environmental knowledge into responsible behaviour. In this project, positions rather than attitude emerged as the central concept. This was characteristically holistic rather than a discrete psychological entity and had folk knowledge and intrinsic behavioural implications associated with its experiential base and compulsive hold. Thus, a reductionist approach which identifies attitude as a separate and central entity does not accord with the findings of the Wollombi research.

Position indicates a stronger, more permanent state than attitude, which includes a determination to defend the position occupied. The corollary is that one may not speak of developing and

changing positions as easily as has been the case with attitudes.

The research need here is to further investigate this holistic form of knowledge, both to more closely define it and to understand its differing contextual force. The author is currently pursuing this via a similar study in another rural context.

2. The subjects of the Wollombi study arrived at their special ways of knowing experientially. But as an epistemology, experiential knowing still receives marginal attention (compared to cognitive processing) in environmental education research and practice. This is despite its recognition within education (see Eisner 1993) and strong advocacy from Van Matre (1990) and Gough (1987). While the research described above was directed at an adult population, there are studies indicative of ideology information in school students (Snively & Sheppy 1991, Van der Veen 1994, Wals 1992) and it is therefore appropriate to raise the following two points for consideration.

The first is to do with the relevance of life experiences to the formation of positions and 'readiness to learn' during the eleven to thirteen years of formal schooling. The Wollombi study suggests that such experiences not marginal, and that an appreciation of their impact on individual students may be a necessary educational task of each teacher. This will require the use of different methodologies, including the interpretivist one.

The second point concerns experience as a way of knowing, in contrast to formal reasoning. The Wollombi research suggests that the status of the sensory experience be revised from that of 'optional extra' or 'somewhat suspicious', (because it might prejudice the formation of 'balanced' attitudes) to something essential in the educational process. In Australia, while it is encouraging to see education authorities beginning to incorporate sensory experiences in their curriculum statements (N.S.W. Department of Education 1989, pp. 45-49; Department of Education, Queensland 1993, p. 8; Victorian Environmental Education Council 1992, p.9; Education Department of South Australia 1987, pp. 15-16), the strategies suggested are rudimentary when compared with the comprehensive character of the Earth Education approach (Van Matre 1990).

3. The Wollombi study has its most direct applicability towards non formal environmental education in the rural sector. In Australia, this relates to a historical combination of acute environmental problems and recent government pursuit of a collaborative environmental policy. In this context, entrenched and opposed positions guarantee a high degree of contestation, for which the key personnel responsible for non formal environmental education may have had little formal preparation. (Roberts 1990, Martin *et al* 1992, Frank & Chamala 1992).

Two examples were observed during the Wollombi field study. The first involved an attempt to formulate an action plan to deal with a severe infestation of salvinia in the Wollombi Millpond, and the discussion took place in the forum of the community based Landcare Group. Through skilful leadership, methodological agreement was reached among previously implacably opposed

positions. The second attempted to educate local farmers about water quality problems in a neighbouring river catchment responsible for the regional domestic water supply. It utilised a field day organised by government authorities and resulted in frustration and disillusionment (Mahony 1994, pp. 331–340).

Perceptive leadership is desirable but cannot be guaranteed, and therefore the need is for a methodologies which accord with paradigms recognising the force of entrenched ideological contexts such as those described above. Here again, it is interesting to note that interpretivist and critical paradigms have been combined in methodologies used by other disciplines. Two of these used in social research, market research and nursing, are critical ethnography and focus groups. The former is based on the assumption that the methodology chosen is not only illuminating, but is involved in the transformation process. The process of reflection between researcher and data is extended to the research participants. Focus groups have been used in both marketing and social research where they provide a forum for identifying the value positions relevant to marketing a product or understanding social mores.

The final point concerns the unacknowledged potential for environmental education in the rural sector. The importance of environmental issues like land degradation and water quality, the willingness of governments and landowners to address these, and the relative lack of institutional constraints, all add support to the argument that environmental educators may have suffered an opportunity cost for their preoccupation with formal, school-based education. If it is agreed that the process of change is necessarily contextual, then the value of an interpretivist research project such as the Wollombi study lies in its ability to illuminate the ideological force of particular contexts. From this perspective, a shift of emphasis towards non formal education, and particularly in the rural sector, presents a relatively unexplored frontier for environmental education research and practice.

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