

An Environmental Epistemology of the Andean People of Peru

Dr. Oakley E. Gordon

- Introduction
 - The Approach Taken in This Project
 - General Considerations
 - Elements of the Approach
 - An Open Mind
 - A Quiet Mind
 - An Open Heart
 - Entering the Andean Epistemology
 - Overview of the Results
 - Organization of this Paper
- Chapter One: Epistemological Issues
 - Introduction
 - The Andean People's Relationship With Nature
 - Epistemological Considerations
 - The Limits Of Using Words To Communicate The Andean Epistemology
 - How To Communicate the Andean Epistemology
 - Implications Of Exploring the Andean Epistemology
 - Epistemological Filters
 - Issues of Science and Religion
 - Science Cannot Be Used To Explore Another Epistemology
 - The 'March Of Science'
 - Supremacy Of The Intellect
 - The Andean Approach Is Neither Science Nor Religion
 - The Nature of Nature
 - Animism
 - Nature and the Supernatural
 - The Importance of Relationship
 - Love and Heart
 - 'Ayni' And The Nature Of Offerings
 - Cause and Effect, and Healing
 - It Is All About Relationship
 - Issues That Are Bigger Than Science
 - Colonial Exploitation
 - Heading for the Cliff: An Outside View of What Science is Doing
- Chapter Two: Teaching Loving and Caring About Nature
 - Introduction
 - Epistemologies And Relationships With Nature
 - The Relationship Between Humans and Nature: Western Epistemology
 - Western Religion
 - Western Science
 - Western Economics
 - Summary of Western Epistemology
 - Caveat on Using 'Epistemologies' to Explain Experience and Behavior
 - The Relationship Between Humans and Nature: Andean Epistemology
 - Teaching the Andean Epistemology to Westerners
 - Overview of the teaching approach
 - The Processes
 - Teaching the Processes
 - Challenges in Teaching the Processes to Westerners
 - Results
 - Conclusion
- Appendix: Basic Principles for a 'Union of Concerned Psychologists'
- References

Introduction

Many of our culture's more intractable problems--including those involving our relationship with our environment--may be the product of assumptions buried deep within Western epistemology [e.g. Atfield, 1983; Bateson, 1972; Bateson & Bateson, 1987; Capra, 1983, 1996; Watts, 1958; White, 1970]. The term 'epistemology' is a combination of the words 'episteme' ('knowledge') and 'logy' ('study of' or 'doctrine'). In this paper the term 'epistemology' will be used to represent a culture's doctrine concerning the nature of knowledge, what it means to know something, and how one goes about gathering knowledge and determining its validity. An epistemology represents the foundation of a culture's philosophy upon which all approaches to knowledge are based. Western culture has an epistemology that supports various approaches to knowledge--for example science and religion--that appear to be quite different from each other yet they have a fundamental set of beliefs in common (i.e. our epistemology). An epistemology is at such a deep level of our thought that its assumptions may not be recognized, let alone challenged. If some of our societal problems do have their roots in our epistemology then it will be difficult to understand the nature of these problems. And further, any attempt to solve the problems using approaches that also have their roots in the epistemology (e.g. science or religion) will probably be fruitless.

Western epistemology has been greatly influenced by the Bible and by Western philosophers such as Aristotle, Plato, and Descartes. Indigenous people who have had limited exposure to Western culture may have a substantially different epistemology. These indigenous epistemologies provide a platform from which to notice and investigate the assumptions of our own epistemology. In addition, within these indigenous epistemologies there may lie patterns of assumptions, beliefs, and behaviors that offer solutions not available within our epistemology, and that can be incorporated into Western culture with beneficial results.

This paper is the product of seven years of research on the epistemology of indigenous people in the Andes in the vicinity of Cuzco, Peru. The general approach taken in this research is similar to that of ethnobotanists who explore the Amazon rain forest looking for natural compounds that may contribute to Western medicine (e.g. Davis, 1996; Plotkin, 1993). The ethnobotanists work with indigenous healers to discover which plants play a beneficial role in the health of the community. This knowledge is then brought back to the West where the beneficial nature of the plants can be scientifically tested.. The ethnobotanists are not performing science in the way that it is most often defined in contemporary philosophy--that of hypothesis testing--it is more a matter of exploration outside of the realms of Western knowledge. There is a sense of urgency in their research, for both the natural environment and the indigenous cultures of the rain forest are facing imminent and irrevocable destruction.

In a similar vein, this project is exploring the patterns of beliefs-attitudes-behaviors of an indigenous culture. These patterns, which originate in a culture operating outside of our Western epistemology, may prove to be beneficial when transplanted to our society, particularly for those apparently intractable problems that have their roots in our epistemology. It will be seen that they may prove to be beneficial not only to our culture but to the rest of the world with whom we interact. There is also a similar sense of urgency for while there are still culturally isolated people in the Andes, the overwhelming influence of Western culture is spreading rapidly.

The analogy between this current project and that of ethnobotanists, however, fails in at least one respect. It is perfectly possible that new drugs can be derived from plants imported from the rain forest, and that our society can benefit from these discoveries without fundamentally altering the basic premises of Western medicine. Importing new patterns of beliefs-attitudes-behaviors from another epistemology, on the other hand, may lead to a fundamental shift in our own epistemology with

implications to the approaches of knowledge which it supports.

The Approach Taken in this Project

General Considerations

It is obvious that if we want to explore how another epistemology differs from our own, then the scientific method--with its roots in our epistemology--will not suffice (for a similar viewpoint see Kim & Berry, 1993). I will return to take a closer look at this point later in the paper, when I discuss the misunderstandings that can occur when we try to 'understand' a different epistemology. The challenge is, of course, that the very idea of 'understanding' is different (by definition) in another epistemology. But if science is not an appropriate tool for exploring a different epistemology then how are we to proceed? It does not seem possible to enter a new epistemology without our old one in place, filtering and interpreting our experiences. Bateson (as cited in Keeney, 1983) argues that to claim to have no epistemology is to have a bad epistemology, while Keeney (1983) modifies Bateson's statement by saying that to claim to have no epistemology is to have one that does not include an awareness of itself. The problem, however, is not as hard as it may seem.

Elements of the Approach

An epistemology provides the foundation for a culture's philosophies, which in turn determines the mental constructs the people in the culture use to understand reality. It is probably impossible to think your way into another epistemology, as your very process of thought is based upon your own epistemology. The general approach in this research project was to have the experience of another epistemology, and then let thought do with it what it will. Over time this approach boiled down to three specific elements: entering the culture with an open mind; entering the culture with a quiet mind; and entering the culture with an open heart.

An Open Mind

To enter an experience in another culture with an open mind involves being neither skeptical nor gullible. Both skepticism and gullibility involve a decision regarding whether something is true or false. The approach used in this project was to take a third option, one that does not evoke an Aristotelian decision of whether something is 'A' or 'not A', 'true' or 'false'. In terms of the hemispheric specialization model this third approach may be seen as favoring right-hemispheric processing. Or, in everyday terms, it means 'having an open mind'.

A Quiet Mind

When entering another epistemology it is also useful to have a 'quiet mind'. To have a quiet mind is to experience, rather than to think about the experience. Given the definition of 'epistemology' it is likely that differences between epistemologies will be greatest in terms of philosophies, as well as in the experiences that are recognized as being possible within those philosophies. Experiences themselves may be much more transcultural. When two people from different cultures sit and watch a sunset, it seems reasonable to predict that their experience will differ more if they think about the sunset, than if they just experience it. As an example, Joseph Campbell (Campbell & Moyers, 1988) tells a story of when Buddhists and Christians met at a religious conference. The priests of each religion, who were specialists in their respective philosophies, had much to argue about. The monks of each religion, however, who were more interested in the experience of spirituality, found much in common. In information processing terms, having a quiet mind may be seen as a favoring of bottom-up processing

over top-down processing. In real terms it means sitting there experiencing what one experiences rather than analyzing it, any analysis occurs after the experience is over.

An Open Heart

The final element that proved crucial to entering Andean epistemology was to enter into relationships with an open heart. Being willing to open one's heart may not be important when entering all epistemologies (i.e. Western epistemology) but it was invaluable when interacting with the people in the Andes and in exploring the experiences made possible through their epistemology. This draws a sharp contrast between the methods of our project and those of a traditional, scientific, research project that is rooted in our epistemology; for in the scientific method the ability to give and receive love is not on the top of the list as an attribute of a good researcher.

Entering the Andean Epistemology

The elements listed above are important attributes for a person who wishes to explore the Andean epistemology, the next question is how one goes about actually entering into and exploring that epistemology. To go in with clip boards and questionnaires would be to stay essentially within Western epistemology, extending a pseudopod, as it were, from our culture into theirs. This would be appropriate if our goal was to determine what science can learn from another epistemology. To step out of our epistemology in the search for new patterns, however, is to step into the avenues the other epistemology provides to support the exploration of its own essence.

The Andean epistemology blends the sacred with the secular in a manner that is difficult for us, the children of Descartes, to understand. The result is that the exploration of their epistemology is an exploration of the sacred, and that exploration is supported by a paq'o. The translation of the term "paq'o" is difficult to arrive at as there is no exact equivalent in our society. Terms such as 'healer, spiritual leader, teacher, shaman, mystic' seem to apply. Américo Yábar, a paq'o who supported this project, is a Peruvian who has in turn been trained by several notable paq'os, and who also has received a Western education. He provided a variety of experiential means for entering into the Andean epistemology. Some of these techniques resemble the meditative techniques of other traditions (e.g. Buddhism), and have provided a way to continue to experientially explore Andean epistemology while in the United States. He also served as a connection to paq'os from other traditions, and thus some of the experiences in Peru have involved male and female paq'os of the Mollamarca, Q'ero and others who live in the Andes in the vicinity of Cusco, Peru. Some of the paq'os we worked with live in physically and culturally isolated villages a few days walk from the nearest road. Although they interact with the West, they do so on their own terms, walking five days to Cusco to sell their goods. They graciously provided this project with a doorway to pre-conquest Andean epistemology.

Before proceeding it should be noted that the Andean mountain range runs the length of South America, and even within a small area, different villages may support compatible yet distinct traditions. This leads to an important caveat, the term 'Andean Epistemology' in this paper is used to provide a general idea of where on this planet this particular epistemology evolved, and is not meant to represent all of the numerous traditions within the entire Andean region.

Overview of the Results

The primary goal of the project has been to explore the Andean epistemology, and to determine what patterns of beliefs-attitudes-behaviors supported by that epistemology can be transplanted into our culture with beneficial results. Some such patterns have been found. Working with the various paq'os of

the Andes has provided a means for entering into their epistemology sufficiently to experience the world in a profoundly different and therapeutic way, an experience which the paq'os confirm is congruent with their own. With the permission of the paq'o's, these patterns have been shared through workshops with people of our culture with good effect (see Chapter Two).

Organization of this Paper

After seven years of work this project is still unfolding; revealing new understandings and implications, refining or dropping old understandings, and opening up new directions to explore (philosophical as well as practical). Although there is no sense of closure on the project, it has reached a point where some of its findings and implications can and should be shared with a larger audience. Chapter One focuses on the challenges that arise in understanding and communicating other epistemologies. In doing so it will lay the foundation for later chapters that will express more adequately the epistemology of the Andean people and its ramifications to our own, particularly regarding our relationship with our environment. Chapter Two will look at how the Andean epistemology, compared to Western epistemology, supports a more intimate connection between people and their natural environment. It will then present the challenges and some of the solutions to those challenges that arose in teaching this epistemology to Western students.

Chapter One: Epistemological Issues

Introduction

This chapter focuses on the challenges of understanding a different epistemology, and of then communicating that epistemology to individuals in your own. These issues need to be addressed before a route for approaching an understanding of the Andean epistemology can be presented. In a circular fashion, the challenges cannot be expressed until some sort of idea of the Andean epistemology is presented. For our purposes now, a brief glimpse of the Andean epistemology will be given using a simple metaphor.

The Andean People's Relationship With Nature

The Andean people have an intimate, loving, and reciprocal relationship with the Cosmos, particularly with the Pachamama (the great spiritual being who is the planet Earth). They experience the Pachamama as a loving and nurturing mother. They love her and depend upon her, and are loved in return. This relationship is more than intellectual, more than a belief or a tenant or concept, it is not a metaphor, it is an experience that nurtures your whole being and informs your behavior.

This is not an experience that is easily reached within our culture, for often we think of the earth as an inanimate--though obviously important--rock. Within our epistemology, we may feel love towards the earth, but we know that the earth cannot really love us back, for it is inanimate. Even though we know that our bodies come from the earth at birth and return to the earth at death, this concept fails to connect us strongly with the earth, for our experience is that we are isolated consciousnesses wandering around upon an inanimate planet. Consequently, many of us fear the end of consciousness with death, when we too will become inanimate, and thus lose all that we hold precious. To us, 'Mother Earth' is just a metaphor.

Epistemological Considerations

The Limits Of Using Words To Communicate The Andean Epistemology

An adequate communication of those elements of the Andean approach that can be beneficial if transplanted into our own, cannot be expressed with words. There are several reasons for this.

First, our language has co-evolved with our epistemology and thus our language does not provide a way to step outside of our epistemology. Perhaps this should be qualified by saying that prose does not provide a means of communicating about things that are outside of our epistemology. Poetry, with its ability to point towards something beyond the words, may be capable of expressing elements of another epistemology.

Second, we lack the reference experiences needed to discuss Andean epistemology. A 'reference experience' is an experience to which we can refer to make sense of a word. For example, we understand the word 'strawberry' because we have seen, tasted, felt, and smelled strawberries. The Andean approach contains experiential elements that the majority of the people in Western culture have not experienced, thus discussing the Andean approach is like discussing the flavor of a strawberry with

people who have never tasted strawberries. Some people in our culture have had experiences that are similar to those available in the Andes, for example through various Buddhist meditative techniques. In the analogy to that of strawberries, at least these people have tasted fruit. It may be that different techniques (Buddhist and Andean) lead to the same experience, or that the techniques used in the Andes can also be found in other (probably indigenous) traditions. The possibilities are interesting but they lay outside of the scope of this paper.

Third, even within our own epistemology issues regarding the sacred are difficult to address with prose. The elements of the Andean approach that could be of benefit to our culture are wrapped up within the sacred, for in their culture they have not driven the sacred out of the everyday lives but experience the two, instead, as being interwoven. The anthropologist Gregory Bateson (1991a) investigated from a cybernetic perspective the role of the sacred within human experience, and discussed the difficulties of using prose to discuss it.

It is very difficult, as you probably know, to talk about those living systems that are healthy; it's much easier to talk about living matters when they are sick, when they're disturbed, when things are going wrong. Pathology is a relative easy thing to discuss, health is very difficult. This, our course, is one of the reasons why there is such a thing as the sacred, and why the sacred is difficult to talk about, because the sacred is peculiarly related to the healthy. One does not like to disturb the sacred, for in general, to talk about something changes it, and perhaps will turn it into a pathology. (pp. 265-266)

The relationships between health and the sacred, and between an attempt to talk about the sacred and pathology, will be revisited for a closer look in Chapter Two.

After proposing that within our epistemology it is difficult to speak of, or even define, health, and that health and the sacred are connected, Bateson (1991a) makes explicit the problem we face: "One of the very curious things about the sacred is that it usually does not make sense to the left-hemisphere, prose type of thinking" (p. 267). So what are we to do when we are expected to examine the sacred from an analytical perspective? In Bateson's (1991c) words:

How shall we say the same thing in the language of the left brain? And the correct answer is simply, "Don't try. It cannot be done."... It is the folly of the deaf linguist to believe that translation is commonly possible...And when attempted, translation from the right to the left is teratogenic, a creating of monsters. My anthropological colleagues have done their share of this. They assert, against all aesthetic sense, that the Paleolithic frescoes were magical devices to enable the hunters to kill the beasts. (p. 292)

There are a number of ways to translate the Andean epistemology into verbal statements that would fit the epistemology of a Western psychologist. And, like the deaf linguist that Bateson talks about, we might even think that nothing of importance is lost in the translation. But in essence, in essence, everything would be lost. For what is this essence, really?

Now I can't tell you the right answers--in fact I'm not sure I would if I could. Because you see, to tell you the real answers, to know the real answers, is always to switch them over to that left brain, the manipulative side. And once they're switched over, no matter how right they were poetically or aesthetically, they go dead. (Bateson, 1991a, p. 268)

How To Communicate the Andean Epistemology

One way to bypass the limitations of prose and thus effectively communicate the Andean epistemology is through experiential workshops. There are a number of meditative-like processes that provide a doorway into the Andean epistemology by providing the experiences which that epistemology supports. Chapter Two will present some of these processes, along with a description of their effect on workshop participants.

A second, but less powerful, way to communicate the Andean epistemology is through stories. Telling stories is a way of evoking vicarious experience in the listener. Vicarious experiences, while less powerful than direct experiences, can provide a route to an experience. Over the seven years of this project, the telling of stories concerning the work in Peru has, from my perspective, been a much more effective approach for communicating the uniqueness of the Andean epistemology than a traditional lecture.

Before moving on it is important to note that labeling workshops and stories as a way to evoke appropriate reference experiences makes sense from the perspective of our Western epistemology. Within the Andean epistemology, however, there is another important element of these techniques, which is that they provide a context in which the presenter can communicate, literally, heart-to-heart with the participants. This point will make more sense after the Andean understanding of 'heart' is presented below.

Implications Of Exploring the Andean Epistemology

In any event, as the actual elements of the Andean epistemology cannot be conveyed in prose, this paper will not attempt to do so. There still remains, however, issues of importance regarding the project that can be addressed verbally. An attempt to bridge Andean and Western epistemologies provides a platform from which to gain a perspective of Western epistemology. It brings to light important elements of our epistemology, and raises questions regarding these elements. In addition to wondering if these elements are of value, it will be seen that they also stand in the way of understanding the nature of this research project and--more importantly--they lead to basic misunderstandings of the Andean approach. These assumptions of our Western epistemology are rather insidious, for they lead us to think we understand Andean epistemology when we really do not. They filter our experience of the Andean epistemology by translating it into terms and concepts that we understand. In doing so, these filters delete all that is truly different and unique about another epistemology, which defeats the whole purpose of the current research project. The next section of the paper looks at these filters. As we are now talking about our epistemology we can proceed using words. In essence, if we can't describe what the Andean epistemology is, we can at least describe what it isn't.

Epistemological Filters

Issues of Science and Religion

Science Cannot Be Used To Explore Another Epistemology

It would be a good idea to begin this section by defining what we are referring to when we speak of 'science'. If we define science in the broadest terms--as an open-minded and systematic study of a

topic--then another epistemology than our own can indeed be studied scientifically. In this paper, however, I will define science in a narrower sense as a specific approach to knowledge that blends empiricism with logic. This scientific approach to knowledge emerged within our epistemology. We can use it to study other cultures but in doing so we are filtering what we gather through a very narrow funnel and translating what we find--as well as what we look for or even notice--in terms of our existing epistemology. Thus if we want to truly explore what is different about another epistemology then we cannot use science as our tool. This thought is reflected in the following statement by an Andean paq'o "The Western scientist relies on theories and Aristotelian logic, to him the beliefs of the Andes are a fantasy. To the people of the Andes, their connection to the Cosmos is real, and the theories and Aristotelian logic are illusions." Américo Yábar (personal communication, June, 1999).

The 'March Of Science'

The concept of the 'march of science' is that science is slowly progressing over the years, building upon the shoulders of previous scientists, and really getting somewhere. There seems little doubt that we have come a long way in science, many dead-ends have been reached and abandoned, knowledge is increasing exponentially, and many experiments of today rely on technology that grew out of previous science that grew out of previous technology and so on. From this perspective it is clear that much progress has been made. But our culture's concept of the 'march of science' has important implications--and barriers--to our understanding and appreciating the Andean approach.

Whether science really is marching ever forward is a matter of debate (see Kuhn, 1970). But the idea that 'science marches on', however, is still popular among lay people and scientists alike and consequently influences how we think about and perform science. It is hard to argue that we, as scientists, don't assume that our experiments lead us forward, and that experiments performed in the last few years are somehow superior or at least more relevant than those performed 50 years ago. There are, however, problems with this 'march of science' viewpoint, particularly in its ability to blind us to other possibilities, and it biases how we think about Andean epistemology.

If we adopt this 'march of science' perspective then indigenous cultures appear to have nothing of value to offer us. They have been left behind in the flow of history, as if in an eddy, thousands of years ago. They appear to have stopped, to have made no progress, they are where we would be if we hadn't shown a little initiative. There are many ethnocentric assumptions underlying this way of thinking; for one it assumes that progress is desirable, for another it assumes that we have progressed in useful and meaningful ways. Rather than taking on these particular arguments the point to be made here is that if we take this perspective then it seems ludicrous to think that indigenous cultures could have anything useful to offer us. And yet if we consider that the epistemology that led to the scientific revolution may also have led to our society's more intractable problems, then the value of looking at other epistemologies makes sense.

With its focus on progress for the sake of progress, the 'march of science' viewpoint tends to ignore the very important question of whether we are heading toward a destination that we want to reach. Are we heading toward a future that supports what we value about life (e.g. love, compassion, justice, freedom, beauty)? If not, then perhaps we should not be so proud of making progress. It is rather incredible that we are so focused in our epistemology on making progress that the question of where we are going is so little asked. It is as if we don't care that the destination towards which we may be heading is the destruction of our planet, as long as we are making progress. Stepping outside of our epistemology, as was accomplished in this project, takes us outside of the games we are so caught up in playing, and gives us instead a perspective in which to look at the rules of the game, and to consider what may happen if we continue to play that particular game. This point will be considered in more detail at the

end of this chapter.

Supremacy Of The Intellect

Western epistemology strongly values the intellect, and expects the intellect to guide our efforts and deliver us from the problems in which we are ensnared. The 'intellect' is defined here as that aspect of cognition that works with symbolic representations of reality (i.e. words and numbers). In science this would include hypotheses, models (verbal as well as mathematical), theories, measurements and statistics. In religion it would include scriptures, interpretations of scriptures, and prophetic announcements (all of which are verbal models of reality). Western epistemology often places the intellect at the apex of human existence, where to understand something (in science) or to believe something (in religion) is to operate at a deeper level than to merely act, feel, or be.

This assumption within science of the supremacy of the intellect has its roots in the philosophy that arose during the Middle Ages as religious philosophers attempted to blend the words of the Bible with the philosophers of classical Greece. Both approaches proposed that the world available through thought or word was more real than the world available through other means (e.g. experience).

Plato proposed that there is a level of reality that is deeper than our experiences. In this heavenly level there resides perfect ideas (e.g. a perfect circle, a perfect cat, a perfect dog) that he called 'universals'. In our material world we experience a less than perfect approximation of those universals. Plato believed that deductive thought was the route towards understanding these perfect ideas. Aristotle also believed in the idea of 'universals' but he believed that they depended upon--and could be studied through--the world of observable phenomena. Thus from the Greeks we were handed the idea that our thoughts (e.g. models or theories) about the world, whether arrived at purely by reasoning (i.e. Plato) or arrived at by gathering observations (i.e. Aristotle), relate to a level of reality that is deeper than the mere experience of the world (for a review of these influences on Western thought see Hollister, 1990)

The Bible too implies that thinking and verbal representations underlie--are more fundamental than--experiential reality. Alan Watts (1958) discusses this point at length (and with his usual clarity) in the book *Nature, Man, and Woman*.

[In the Bible] things of the spirit are identified with the things of the mind--with the world of words and thought--symbols--which are then seen, not as representing the concrete world, but as underlying it. For "in the beginning was the Word," God the Son conceived as the Divine Idea after whose pattern the universe was made. Thus the realm of concepts acquires not only an independent life of its own, but a life more real and more fundamental than that of nonverbal nature. Ideas do not represent nature, but nature represents ideas... It is hard not to feel that this is the power of thought running away with itself and getting out of hand, and defending itself against the charge of nonsense by asserting that its own reality is primordial, and nature but its clumsy copy. (Pp. 34-35)

The scientific revolution grew out of the efforts to decide whether this realm-of-ideas-that-is-deeper-than-nature should be approached purely through the mind (ala Plato) or through applying the mind to observation and measurement (ALA Aristotle). The idea that there was such a deeper level remained unquestioned, as did the assumption that this level contains laws that nature follows. The latter was a carryover from the metaphor of God, the creator of the universe, as an earthly King whom all of nature must obey.

In psychology we speak as if we believe that nature, including human behavior, follows such laws. We talk about discovering the laws that govern behavior, that underlie human experience, that control what

we do, that are the basis (i.e. foundation) of our mental processes. It is as if we think we brush the data in our experiments away to reveal the patterns that lie beneath, and that those patterns are more real (i.e. reside at a deeper level of reality) than the data. If we believe this then we will believe that the discovery and explication of those laws leads to a Universal Truth that is deeper than any epistemology. If that in turn is true, then science may indeed be the best tool for studying anything, and consequently the knowledge in our Western, scientific epistemology is more sophisticated and realistic than that of the Andean people, who are simply being governed by rules that we understand and they do not.

Yet this way of thinking is a product of our epistemology, and even then is not held by all scientists by any means. A review of science in the 20th Century shows an emerging belief that our models and theories are descriptions of nature, rather than a discovery of the rules that control nature. The distinction can be seen in the following scenario. We say that an artillery shell follows a parabolic path. The assumption within this statement is that the formula for a parabola is built into the laws controlling the flight of the shell. The alternative perspective is that the artillery shell does what it does, quite consistently, and that the mathematical formula for a parabola draws a line on the graph that describes (mimics) the flight of a artillery shell.

An alternative to the idea that the products of our intellect (symbolic representations) are deeper than the reality they represent, is to say instead that they are one step removed from that reality, that they are less real than the experience they represent. This is the attitude taken by the systems theorist Ashby (1970). In arguing against the viewpoint that models represent a deeper layer of reality, he states instead that the models we create are always 'second-rate' in the sense that the model can never equal nor exceed the aspect of reality being modeled, and that we make models to lose information, to make the world simpler to understand.

In summary, both science and religion propose that the products of the intellect (models, theories, scriptures, whatever) are somehow more real than reality, and thus more real than a particular epistemology. If that is true then there is little use in stepping outside the bounds of our epistemology--whether it be science or religion--when studying the Andean epistemology. We should go over there with clipboards, surveys, and stop watches, or with the Bible, and let her rip.

But the intellect (which works with verbal and mathematical symbols) is a subset of human cognition, and logic (favored by scientists) is a subset of the intellect, and as they are subsets, neither the intellect nor logic can subsume the totality of human experience. Logic does not give us guidance nor value, it is a great way to get somewhere, but is incapable of selecting where to go for logic must work with values that are provided as premises to the argument. As will be seen, the Andean approach offers a different means for guiding our behavior, individually as well as culturally.

The Andean Approach Is Neither Science Nor Religion

The Andean approach to being in the world is not scientific (as defined above) as there is no formal hypothesis testing, and logic is not the sole basis for believing something. Nor does the Andean approach fit within the category of being a religion, at least not our concept of religion as based upon those that sprang from the Bible, as those religions tend to define themselves by their belief in a verbally expressed representation of reality. Quechua, the native language of the Andes, does not have words for "religion" or "god" (for a discussion of this see Palomino, 1993).

The Andean people do have beliefs, but those beliefs are based upon and support experience. Believing is irrelevant when separated from experience. The term 'belief' may not even be appropriate in this context, for within Western epistemology 'belief' plays a role that is not universal across other

epistemologies. In both Western science and Western religion 'belief' involves a judgment of whether something is True or False, (with 'true' being good and 'false' being bad) which is a very Aristotelian and Biblical distinction. Something else appears to be going on in indigenous approaches to the sacred.

The Lesson of the Mask: neither real nor metaphorical. Joseph Campbell (1950) examined the role belief plays in ceremonies of indigenous people involving participants who wear costumes to represent a deity. The people who participate as spectators know the person in the costume (e.g. their uncle), and yet during the ceremony they experience him as a deity. If they know he is their uncle do they really believe he is a God during the ceremony? Yes or no?

One choice we have, when faced with seeing our uncle dressed up as a deity, is to acknowledge that it really is our uncle standing there, but that in the ceremony he represents the deity, standing in for the deity in a metaphorical sort of way. This is the interpretation often offered by Western science, which refuses to believe that the uncle has really been turned into a deity. About this choice as a way of entering the sacred in a ceremony Campbell says:

The logic of cold, hard fact must not be allowed to intrude and spoil the spell. The gentile, the "spoil sport," the positivist, who cannot or will not play, must be kept aloof. Hence the guardian figures that stand at either side of the entrances to holy places: lions, bulls, or fearsome warriors with uplifted weapons. They are there to keep out the "spoil sports," the advocates of Aristotelian logic, for whom A can never be B; for whom the actor is never to be lost in the part; for whom the mask, the image, the consecrated host, tree, or animal cannot become God, but only a reference. Such heavy thinkers are to remain without. (p. 25)

Another choice on how to approach the experience of the ceremony is to believe that during the ceremony that uncle Charley really has been turned into a God. This is the choice of Western religion, to hold the mythological referent as literally true, to see the appearance of God in place of the uncle as an objective fact. But Campbell argues against this as well, saying that this choice also misses what is really going on for the participants. He then concludes:

It must be conceded, as a basic principle of our natural history of the gods and heroes, that whenever a myth has been taken literally its sense has been perverted; but also, reciprocally, that whenever it has been dismissed as a mere priestly fraud or sign of inferior intelligence, truth has slipped out the other door. (p. 27)

So what do we do when we examine the beliefs of people like those found in the Andes. Do we say that their beliefs are True, or do we say that they are the imaginations of a 'primitive' people? How do we interpret how they experience their beliefs? Do we say that they literally believe them or that they see them as useful metaphors? It is very hard not to take one stand or the other, to force the situation to fit ONE of two categories. Yet if we do, then truth may slip out of the door. Campbell argues that neither choice is correct, that there is a third alternative, one not readily found within our epistemology, where the decision of True or False is held in abeyance, as it is irrelevant.

The nature of the Mass: both real and metaphorical. A similar point can be found in Bateson (1991a). He begins a discussion on the nature of the sacred by examining the beliefs held by people in our epistemological history.

In the fifteen century in Europe, many Catholics and Protestants were burning each other at the stake, or were willing to be burned, rather than compromise about the nature of the bread and wine used in the Mass. [The Catholics said] that the bread is the body of Christ

and the wine is the blood...The Protestants said...that the bread stands for the body of Christ and the wine stands for the blood. I do not want to suggest to you that one of these sides is better than the other, but I do intend that his whole argument is one of fundamental importance when related to the whole of the nature of the sacred and human nature. (p. 266)

So which side does Bateson take?

Now it is my suspicion that the richest use of the word 'sacred' is that use which will say that what matters is the combination of the two, getting the two together. And that any fracturing of the two is, shall we say, anti-sacred. The Catholics and the Protestants were equally anti-sacred in their battles. The bread both is and stands for the body. (p. 267)

The third choice. I believe that Campbell and Bateson are addressing the same issue, a choice about the nature of the sacred that falls outside of our epistemology. We may take a scientific perspective and see the Andean 'belief' in the Pachamama as being False (there really is no such spirit) or True (but only in the sense that it is really just a metaphor). We may take a religious perspective and say that the Andean belief in a spirit of the planet earth is True (the Pachamama really does exist) or False (i.e. not consistent with my belief system). In either case we come down to a position that a belief in the Pachamama is either True or False, for the two choices are mutually exclusive. And yet Campbell says that in the path towards the sacred neither choice is correct and Bateson says that on the path toward the sacred they are both correct. What kind of belief is both true and false, and neither true nor false? A definition of belief that lies outside of the epistemology founded on the Greeks and the Bible. What I call the 'third choice'.

As mentioned earlier, Bateson said that: "One of the very curious things about the sacred is that it usually does not make sense to the left-hemisphere, prose type of thinking" (Bateson, 1981a, p 267). The 'third choice' cannot be described by prose nor understood by logical/verbal thought. Its existence, however, is familiar to us, for there are contexts in our culture where prose has no place, where the distinction between metaphor versus literally true is not relevant, yet something of great import to human existence is being carried out. One such context is art.

Imagine a dancer appearing on the stage, dressed in a costume that suggests a swan. In such a context the scientist does not think to stand and demand 'Wait a minute, that's not really a swan', nor does the priest stand and ask in amazement 'Where did that giant swan come from?' The dancer does not say to the audience 'it is important that you believe that I am really a swan', nor does the dancer say 'please do not be alarmed, for I am not really a swan'. The issue of whether the swan is 'real' or is 'not' is irrelevant, taking either side puts one in a frame of mind that is inappropriate to the experience being offered. I am not saying that the Andean belief system is a type of art, but that they are in some ways comparable. Can you combine the sacred with the secular in your life and have it not be a work of art?

The Nature of Nature

Animism

The term 'animism' refers to the belief that a spirit or soul exists in inanimate as well as animate objects. The Andean approach sounds very 'animistic'. They talk about the Pachamama (the great spiritual being who is the planet Earth), the Apus (the spiritual beings who are the great mountain peaks), the Quyas (the spiritual beings who are the special stones), etc. It is very difficult for a scientist to take an animistic approach seriously, to think that it may actually have validity. Animism is

sometimes included at the beginning of introductory science books as an example of just how simple and primitive we use to be before real science came along. Yet this is a case where our epistemology does not give us an accurate view, for our understanding of 'animism' is based upon our epistemology, and it totally misrepresents how another epistemology may experience it. Thus we label the Andean approach as 'animistic', and think we adequately categorized it (and then dismiss it) but instead of seeing the Andean approach we are actually looking into a mirror.

Descartes divided reality into two realms that were fundamentally different: a 'physical realm' consisting of matter and energy and operating on purely mechanical principles; and a 'mental realm' of soul/mind/consciousness that is transcendent to the physical realm. Science eventually tossed out the mental realm as being either an illusion or, at best, a mere byproduct of the physical realm. In our culture today we are still given a choice between a Cartesian reality where bodies are inhabited by transcendent souls, or a monistic reality where only bodies operating on mechanical principles exist and there is no 'ghost in the machine'. In a similar fashion, when faced with talk of spirits in nature we are given the choice between accepting that there are transcendent spirits residing in inanimate objects; or of dismissing the spirits as being the product of a naive and unsophisticated philosophy.

There are other options. It appears that in the Andean view consciousness exists in all things (animate and inanimate), and it is neither a byproduct of a nervous system nor is it the function of a transcendent, anthropomorphic soul. A search for words to describe such a consciousness leaves one groping. Perhaps consciousness is an inherent attribute of all that exists (e.g. a nature of the energetic fibers that are described later in this work). The paq'o Américo Yábar defined the Pachamama as 'the great cosmic being who is the planet earth' (personal communication, June, 1995), he didn't say she is 'the great cosmic being who resides in the planet earth'. But if inanimate objects as well as other life forms have consciousness what is it like? We know what it is like to have a physical body and to be aware of (some of its) operations. It is difficult for us to understand what it would be like to be a different kind of consciousness. We quickly find ourselves back into Cartesian dualism, asking such relevant questions as how a transcendent consciousness could have perception without sense organs? And how can a transcendent soul have memory without neurons? But Andean mysticism does not appear to propose a transcendent soul, nor does it propose a Nature of dead matter and energy. To define the Andean approach as 'animistic' is incorrect unless we redefine 'animism' to point toward an approach that is not available in our epistemology. This is an example of how our existing terminology can mislead us. Given a choice between using the terms 'transcendent' or 'deterministic' to describe the Andean epistemology, the answer is neither; a third choice is needed.

Nature and the Supernatural

Indigenous approaches such as those found in the Andes are often interpreted as believing in the supernatural, yet this is an inaccurate description, for the concept of the supernatural (like the related idea of animism) falls entirely within our own epistemology. When we hear of connecting with the Pachamama, of letting our spirit connect with the spirit of the river, of calling on the sacred Apus (the great spiritual beings who are the great mountains), both the limitations of our language and the assumptions of our epistemology lead us to understand these statements as presenting a supernatural viewpoint. Either there really is a supernatural realm and these evocations may work, or there is no supernatural realm and these evocations are quaint beliefs of a primitive people. Again, neither option is correct.

Our concept of the supernatural needs to be shifted if we are to understand the Andean epistemology. David Abram provides an excellent discussion of this issue in his essay "The Magic of Ecology"

(1985). Abram points out that both Cartesian dualism and scientific monism view nature as mechanical and deterministic. Thus in our epistemology nature is no more mysterious than a VCR. We may not know exactly how a VCR works, but there is nothing 'mysterious' about it. If we were to explore the inner workings of a VCR we would arrive at a very sensible, mechanical, explanation. The same holds for the actions of flowers as they turn their heads towards the sun, and squirrels as they bound from tree to tree. We may not know exactly how they operate, but if we were to explore their mechanisms we would find a sensible, mechanical explanation (e.g. that cells on the flower stem exposed to sunlight grow more slowly than those facing away thus the flower turns to the sun, and that squirrels are bundles of neurons and muscles following behavior patterns stored in their genes, placed there as the result of natural selection). Again, just because we may not know the answer, there is nothing 'mysterious' about it.

And yet at times we do experience a sense of incredible mystery, of the ineffable, of awe. This often happens in relationship with nature: when experiencing a sunset; when looking in the eyes of our newborn child; when standing under the dome of stars in a dark-night sky (the Andean people experience this much more than we do). When we experience the mystery, the ineffable, awe, to what can we attribute it? We do not attribute it to nature, for that is just a biological machine. We are left, instead, with the choice of attributing it to a supernatural world that transcends the biological machines of Nature, or to the internal world of the human mind (psychology still allows the ineffable to exist within the human psyche). Yet this is not how the Andean people experience it. For them the Cosmos itself, Nature, the Earth, the Wind, the Stones are mysterious and offer ineffable experiences and can evoke awe. They experience Nature as beautiful, awe inspiring, and having within the ultimate mystery of that which cannot be known by the intellect. Again we have a third alternative; not supernatural, not mental, yet there, in Nature.

The Importance of Relationship

Love and Heart

An understanding of the Andean perspective on the nature of love and of the role of the heart requires an understanding of three energy centers in the body: the *llankay* (located near the navel) that controls the energy of the body; the *llachay* (located near the crown of the head) that controls the energy of mental thought; and the *munay* (located near the heart) that controls the energy of love. Within Western science the identification of the heart as the center of love is seen as a quaint mistake, while in the Andes it is considered to be literally true. But 'love', in this context, does not refer to the emotion that our culture calls by that name. To understand how the term is being used in the Andean context, 'love' must be separated from any romantic connotations, from any sense of possessiveness (e.g. jealousy), from sentimentality, and even from affection. The term translated as 'love' is associated with a sense of union with the rest of the Cosmos. It is more of a sensation than an emotion. The *munay*, the place for interacting with the world that works with the energy of love, lies completely outside of *llachay* (thought). The work of the *munay* involves the development of a set of distinctions that are available literally--not metaphorically--when consciousness is moved to the area of the heart. The difference between the experience of the world that is available in the two centers is that when we are operating from the *llachay* (intellect) we experience ourselves as isolated units disconnected from the rest of the Cosmos, but when we are operating from the *munay* (heart) we experience being interconnected with all of the Cosmos. The *munay* operates in a fashion that is unfathomable to the intellect.

In Western epistemology the *llachay* (intellect) is expected to guide people, operating under the verbal

rules of Aristotelian logic or religious dogma. By comparison, in the Andes paq'o's are guided by the munay, and the intellect is a servant of the heart. The intellect--for all of its great powers--is ill equipped to provide direction or to take the lead, for how can a set of premises logically prove themselves to be true? The original premises must come from some place other than logic. Given its current expression as a blend of logic and empiricism, the value and morality of what we do in science cannot be determined scientifically. We need to step away from the intellect and into the munay to access value and beauty, and thus set a direction. The intellect can then determine a logical way to proceed.

It seems reasonable to say that all three energy centers--llachay, munay, llankay--need to work together to express the full potential of a person, and a species. If we look at the flavor of various cultures, Europe may be said to represent the mind (think of all the great European philosophers), the United States may be said to represent the body (technology as the ability to accomplish things in the physical world), and the Andes as one of the many cultures in this world that represent the heart (an unfathomable realm of beauty and interconnectedness). Bringing these three cultural predilections together may be the only way we will survive as a species.

'Ayni' And The Nature Of Offerings

The ceremonies of the Andes involve making one or more offerings to the entities of nature; the Pachamama (the great cosmic being who is the planet earth), the Apus (the great beings who are the sacred mountains), and others. These offerings are often followed by a request for a specific favor or action by those entities. It is easy to typify this format as a payment or a bribe to Nature to magically evoke a desired outcome. To do so, however, is to miss the point completely.

Offerings are part of a dance between participants that are relating to each other in the spirit of ayni. 'Ayni' is a principle of reciprocity, and it lies at the foundation of the Andean approach. In ayni, nothing is received without giving something in return, and giving something evokes a receiving of something back. The principle is one of balance, not payment. The distinction is a fine one, but important, for ayni is not about payment or about positive reinforcement, ayni is about relationship. If you give flowers to the one you love, and then at some future point you have sex, were the flowers a payment in advance for future favors? Were the flowers a bribe? Among people who know how to relate in love the answer to both of those questions is 'no'. The flowers are a gesture to propose, acknowledge, and nourish a special way of relating. In a similar fashion the offerings ('despachos') given to the Pachamama and to the other great Cosmic beings play a role in defining a special way of relating.

When the importance of 'ayni', i.e. of 'reciprocity', is brought to the forefront, then the error of taking specific meditative techniques from the Andes and selling them in the United States (which is tempting) becomes obvious. The essence of the Andean epistemology lies in relationship, not in technique, though both are important. To peddle Andean meditative techniques without attending to relationships is to stand with our two feet planted firmly within our epistemology. To attend to ayni--to the balance of the relationship between people, the relationship between cultures, and the relationship between the children of the Earth and the Earth herself--is to stand within the Andean epistemology.

Cause and Effect, and Healing

Our epistemology's view of cause and effect can lead to a misunderstanding of the role of a paq'o during a healing ceremony. The role of the paq'o is not to heal the person, but to help the person get into a state of harmony within the various levels of their existence. As the Andean perspective is that

the Cosmos is one interconnected whole, it is also important that we be in harmony with the rest of the Cosmos, and this the paq'o can also support. If the person subsequently becomes healthier, did the paq'o cause that to happen? If we have a garden and some healthy tomatoes grow in that garden did we cause that to happen? Are we responsible for the growth of the tomatoes, or are the needs of the tomatoes responsible for us weeding and watering them, or is the weather responsible, or the sun? When a paq'o heals someone he or she is putting them in harmony with nature, and then the healing occurs. Did the paq'o really heal that person, or did Nature? The uncertainty of the answer stems from our attending to the elements of the relationship rather than upon the relationship itself.

As the context of healing concerns our relationship with the Cosmos our focus should not be just on the paq'o and patient but on the role of the paq'o in the relationship between the patient and the rest of the Cosmos. This is essentially what Abram (1995) has defined as the role of the shaman in indigenous cultures. The role of the shaman is not just to heal people, prophesize, or locate missing animals; instead the shaman's role is primarily to be an intermediary between the people and the wider, mysterious, interconnected society of Nature. Thus the focus should not be on the ceremony, nor the patient, nor the shaman, but on relationships.

It Is All About Relationship

One of the aspects of the Andean approach that makes it so hard to understand within our epistemology is that the Andean approach is essentially about relationships, while our epistemology and language mainly focus on objects. The closest Quechua word to the verb 'to have' means 'to be with'. They don't have a spouse, they are with a spouse. They don't have a house, they are with a house. They don't have land, they are with the land, and so on. The ceremonies, beliefs, behaviors of the Andean people keep them in an intimate relationship with the natural world. Further, it is a true relationship in that it works in both directions. Not only do they love the earth, and the wind, and the sky, and the stars; they in turn are loved back. The latter is particularly difficult to experience from within our epistemology, where nature is deterministic and mechanistic and lacks any aspect that could be said to be capable of love. No wonder we are destroying the world to benefit ourselves.

Issues that are Bigger than Science

When, in a project like this, one steps out of Western epistemology to explore another epistemology, issues arise that are bigger than science. Leaving our epistemology provides a perspective of what we are doing, viewed from afar as it were. Patterns that occur within science, and between science and the rest of our culture, and between our culture and the rest of the world become more evident. These issues are highly relevant to the current paper. Indeed, as the Andean approach itself cannot be stated within our epistemology, its implications to our epistemology are about the only fair game in town.

Colonial Exploitation

The major premise of this paper was described as a going off to another (in this case indigenous) culture and finding patterns of value that can be transplanted back into our culture for our benefit. This is a pretty succinct definition of colonial exploitation. Unfortunately, issues of ethics, and wisdom, and justice are irrelevant to the scientific method. They are relevant, fortunately, to scientists who use the scientific method. In our epistemology the discovery of new techniques and technologies is often separated from issues of the value and ethics of their application (or worse, the scientific method is used as a justification because the 'quest for knowledge' is inherently noble). In the Andean

epistemology, however, the meditative techniques that provide a more harmonious relationship with the Cosmos cannot be separated from ayni. Ayni requires that what is given is matched by what is received. Those techniques cannot be simply transplanted to the United States without regard to reciprocity with Nature and with the culture that so generously shared those techniques with us, as such an act would rip the meditative techniques from the fabric which gives them meaning. I am committed to the principle that if our culture benefits from what I bring back from the Andes, then the people and land that gave us these techniques will benefit as well. Within our epistemology this may sound rather 'holier than thou', in the Andean epistemology this is just simply the way to proceed.

Heading for the Cliff: An Outside View of What Science is Doing

This paper will conclude with a discussion of what may be the most important realization to be had by journeying into the Andean epistemology and then returning to our Western epistemology. It is an issue that has very much to do with science, but comes from looking at a larger context, at the relationship between science and life on this planet.

I believe that our species is speeding towards a cliff*, and that we will take many other species and much of what is beautiful about the world with us. What is worse, we are accelerating, accelerating due to our attempts to solve the problem by applying the same thinking that got us into the problem in the first place. Within this metaphor psychology can be viewed as a collection of scientists sitting in the back seat of the car, playing with our toys. It is not that we are oblivious to the sense of impending doom, nor are we callous about the horrible and inevitable consequences we will face once the car has shot off of the rim. It seems, instead, that most psychologists hope that through the collected efforts of our research that we will learn enough about human behavior to wrench control of the car and steer it away from the precipice before it is too late.

* I am not alone in this belief, see "Population Growth, Resource Consumption, and a Sustainable World" (a joint statement by the U.S. National Academy of Sciences and the Royal Society of London, 1992); the "World Scientists' Warning to Humanity" signed by over 1600 of the world's leading scientists, including the majority of the Nobel laureates in the sciences (Union of Concerned Scientists, 1992); the "World Scientists' Call for Action", signed by over 1500 scientists representing some 65 countries worldwide, including 104 living Nobel Prize winners in the sciences and 60 US National Medal of Science winners (Union of Concerned Scientists, 1997); and the writings of such individuals as Cowell (1990); Kellert & Wilson (1993); and Wilson (1984, 1992).

This hope seems unreasonably optimistic. Our experiments in psychology are usually neither directed towards, nor justified by, the goal of keeping us from destroying our world. Instead, our experiments are designed to answer extremely specialized questions of a highly intellectual nature. It is as if we believe that even though the individual experiments are not addressing the problem, that somehow the enterprise as a whole will solve the problem, perhaps as an emergent property or fortuitous byproduct of an endeavor that is really focusing on something else. The stakes seem rather high to rely on this strategy.

Once we understand human behavior, to the point where we can sufficiently control it and begin to steer the car, will psychology provide the wisdom, ethics, motivation, and direction to head us away from the cliff? Or, is our goal only to discover how to steer the car and the rest is up to someone else? Perhaps that is not our job, we are only scientists. But if we adopt this attitude, then we are not just playing in the back seat with our scientific toys as the car heads towards the precipice, we are also playing our allotted role in the game that pushes the accelerator to the floor.

Psychology has emerged largely within the scientific approach to knowledge. Science, in turn, has

emerged within a cultural system whose epistemology may contain the foundations of our problems. Perhaps it is time for us to stop playing with our toys for a minute, to poke our heads up and see where the car is going, and entertain the notion that new priorities and different assumptions may be necessary for the situation we now face. Examining the epistemology of other cultures is one way to break out of our current bounds. Complacency, arrogance, or ethnocentrism will take us all to the cliff, and after that no amount of saying we are sorry will make any difference.

Chapter Two: Teaching Loving and Caring about Nature

This chapter was written for presentation at the 8th International Symposium on Society and Resource Management (ISSRM) on June 17-22, 2000 in Bellingham, Washington. It was particularly targeted for the paper session "Caring About and Caring for Nature: What do we know?". The description of the contents of the session were as follows:

Promoting caring attitudes about the natural world and inspiring conservation actions are two goals for many conservation organizations. On the one hand, there's the long-term challenge of engendering a "caring-about" nature, which involves understanding and creating the conditions for deeper change in attitude, value, and ethics. And how do such bonding, deeply felt, relationships develop? On the other hand, there's the shorter term challenge of motivating people to "care for" the natural world by engaging in conservation behaviors. What are the factors that encourage people to move from concern to action, and what leads to lifetime changes in behavior?

Note: The General Introduction and Chapter One of this paper should be read before this chapter, they provide a critical background to many of the ideas expressed below.

Introduction

An intellectual understanding of ecology may not provide sufficient motivation for people to behave in an environmentally healthy manner, what may also be required is an attitude of respect or love for the natural systems in which we operate (Keeney, 1983). Western epistemology, however, is not well suited for the development of such an attitude. Through the contributions of Plato, and Aristotle; the Bible; the Cartesian division of spirit and matter; and the subsequent development of scientific materialism, we individuals operating within Western epistemology tend to experience reality as if we are isolated consciousnesses interacting with a mechanical and devalued world. In such a reality, loving or respecting a tree is almost as ludicrous as loving a copy machine, the only difference being an intellectual awareness that we are--in the big picture only--more reliant upon trees than upon office equipment.

If the problems we face in caring about nature are inherent in our epistemology, then an exploration of other epistemologies may provide solutions that would not be apparent within our own (for a book based upon this premise, containing readings from various indigenous cultures, see Piacentini, 1993). The epistemology of the Andean people--introduced in the previous chapter--supports an entirely different relationship with nature, a relationship of mutual love and support. As a culture's epistemology provides the foundation for the culture's experience and understanding of reality, a change in epistemology should result in changes in attitudes, values, relationships and ethics, with a resulting change in behavior. Thus the Andean epistemology could be a source for the changes we need in our society to have a healthier and more caring relationship with nature. The Andean epistemology will be of little use in the healing of our culture's relationship with the environment, however, unless a means can be established for incorporated elements of the Andean epistemology into our own.

This chapter will examine in more detail the differing types of relationships between humans and the rest of nature that are supported by Western and Andean epistemologies. Beneficial alterations in

epistemology resulting from working with *paq'os* in Peru will be described, as well as the results of workshops offered to teach the Andean epistemology to Western students. The chapter will conclude with a look at some of the challenges, and some of the solutions, to teaching elements of the Andean epistemology to Westerners.

Epistemologies and Relationships with Nature

The Relationship Between Humans and Nature: Western Epistemology

Western religion, Western science, and Western economics (which all have their roots in the same epistemology) do not support the development of a loving and caring relationship with nature. It is possible for individuals operating within Western epistemology to develop a loving and caring relationship with nature, but the underlying epistemology does not nurture such a relationship and in some ways works against it.

Western Religion

This discussion of Western religion will focus on the Bible and its expression through Christianity. It should be noted that generalizations will be made that do not apply to all forms of Christianity nor to all Christians.

The Bible proposes that humankind is fundamentally different than the rest of nature, as humans alone were made in the image of God, and were placed in the role of dominion over the rest of nature, to be named and used as humans will. The most important aspect of our existence, the soul, is presented in the Bible as being transcendent to biology, as something that 'descends' into nature. Indeed, at times in our religious history, nature and all matters of the flesh were viewed as evil, as the corrupting enemy of the soul. Thus the most important, eternal, aspect of being human (i.e. the soul), is viewed as being not part of nature, but above it and separate from it, and as either its master or the victim of its temptations (for a more complete discussion see White, 1970; and Watts, 1958).

The Bible also proposes that humankind should serve as a steward to the rest of nature, and this can be used to support acting in an environmentally friendly fashion. Note, however, that the term 'steward' denotes serving in the role of an administrator; for example, being in charge of a large estate. This places humans above nature, with the God-given right to rule things as we see fit.

Much of the energy behind religious support for the theory of creationism and antagonism for the theory of evolution may be due to evolution's placement of humankind as a branch within the same tree as the rest of nature. Some creationists support the idea of evolution within a species, but do not support the idea that evolution led to various species, thus it appears that they do not object so much to the idea of evolution as they do to the idea that nature created humans, which would put them firmly within nature rather than above it.

The worship of the God of the Bible puts our attention away from nature, to a supernatural realm that is of paramount importance. Nature serves as a type of temporary context in which the soul will operate. Places of worship are made by humans, for humans, creating a sacred space that separates the worshippers from nature and reinforces their unique connection to a transcendent God, a god who created Nature and is thus separate from it.

Western Science

This discussion of how science does not nourish a loving and caring relationship with nature will focus, as in the previous chapter, upon the writings of René Descartes and the subsequent development of scientific monism. Descartes divided reality into two realms that were fundamentally different: a 'physical realm' consisting of matter and energy and operating on purely mechanical principles; and a 'mental realm' of soul/mind/consciousness that is transcendent to the physical realm. Nature, including the human body, was placed in the physical realm. Nature was viewed as a biological machine, consisting of matter and energy, operating purely on mechanistic and deterministic principles, and available to study through science. Consciousness, the mind, the soul were properties to be found only in humans, and were placed in a separate 'mental realm', which operated outside of deterministic principles and thus could have free will. This mental realm was available for study through religion and philosophy, but not to science. So once again, we find in our culture a separation between humankind and nature. This is not surprising as Descartes' philosophy grew out of the incompatibilities that were arising between natural philosophy based upon the Bible and that based upon empirical studies (for a good review of the evolution of philosophy that led to the scientific revolution see Hollister, 1990).

Although the dualistic philosophy of Descartes was eventually dropped by science in favor of a monistic view, Descartes' dualism still influences our society. An example that is particularly relevant to our culture's relationship with the environment is that by placing 'ethics' and 'morality' in the mental realm, and technology in the physical realm, Descartes drove a fundamental wedge between wisdom and ethics on the one hand, and the development of technology on the other.

Science eventually tossed Descartes' mental realm out of reality, as being either an illusion or, at best, a mere epiphenomenon of the physical realm (e.g. the mind was viewed as a byproduct of the mechanical operations of the brain). This left us with a natural world that is simply a set of complicated, biological, machines; and with consciousness and mind viewed as epiphenomena that arise only in complicated nervous systems, such as that found in humans. In this view we can maintain our superiority (for we have a nervous system that is complicated enough to produce consciousness) yet we can still say what is really going on is purely mechanical and deterministic.

In throwing out the mental realm, scientific monism threw out with the bath water everything we value and everything that has meaning to us: e.g. love, curiosity, beauty, justice, freedom, wonder, and awe. All of these values fall outside of science, for they are mental constructs rather than measurable, physical quantities of matter or energy. Social science can measure what a person, or a society, values; but, science (social or not) cannot tell us what to value nor justify having any values at all. Science is value free, they say, what a loss.

Western Economics

The effect Western economics has on our relationship to nature will be more fully explored in a later chapter of this paper. For now, the discussion will focus on the curious way our society has reversed the relationship between value and money; and on the confusion that arises as we use the term 'value' in inconsistent ways.

Money was originally invented to serve as a symbolic representation of what we value, replacing a much more cumbersome barter system. The interesting twist is that while money was invented to serve as a symbolic representation of what we value, it has become, instead, something that is often more important than what humans actually value (e.g. love, justice, beauty, health, and comfort). For people in our society who are heavily engaged in the pursuit of gaining as much money as possible, the pursuit

of money may take precedence over their relationships with their family (e.g. spending more time with their children); justice (equal opportunities); their health (e.g. pushing themselves to point of stress-related illness); the beauty of a landscape (if it sits atop a reserve of coal); and comfort (surrounding themselves with a comfortable home or vacation environment that they have little time to enjoy). Somehow the symbol (money) has become more important than what it represents (those things in life we value). In essence, we are eating the menu (this metaphor was introduced to me by Dr. Tom Malloy of the University of Utah).

Another interesting point about using money to represent value is that it allows us to quantify value, which is really what money is all about. But can value really be quantified? If we adopt Cartesian dualism then it is the mental realm that assigns value to something, and by definition the activities of the mental realm cannot be quantified. If we adopt scientific monism, on the other hand, then the mental realm does not exist, there is only behavior, and that can be quantified.¹⁰ But then, the idea that money quantifies something internal within ourselves collapses, for we are left with a world where money and behaviors involving money but internal values do not.

This strange situation is reflected in the definition of 'value' in the Webster's (1970) dictionary on the shelf by my computer. In looking up the definition I find that the word means both 'the worth of a thing in money or goods at a certain time; market price' and 'that which is desirable or worthy of esteem for its own sake; thing or quality having intrinsic worth.' These two definitions are contradictory, is value quantifiable or not? This is the dilemma that some people face when in surveys when they are asked to put a dollar value on something they view as having intrinsic value (e.g. clean air, pristine beauty). They may answer '\$50' when asked how much of a tax increase they would tolerate to protect a wilderness area, but may answer '\$infinite' when asked to state the value of that same wilderness area. This basic, usually unexamined, confusion about the nature of value (and the value of nature) is intrinsic within our epistemology.

Summary of Western Epistemology

Western religion places humans--at least what is considered to be the most important aspect of humans--outside of nature and with a mandate to control nature. Descartes placed what he considered to be the unique aspects of being human (e.g. the mind, consciousness, the soul) in a realm that transcends nature; separating ethics and values from the pursuit of science. Science subsequently tossed the mind, consciousness, ethics, values, and spirituality out of reality, leading to a view of nature (and the rest of the Cosmos) as being a vast machine. Western economics tends to value money more than what it represents, and confuses that which is quantifiable with that which is not (e.g. equating the \$3 in gas money it takes to rush a loved one to the hospital to the \$3 spent on popcorn at a movie).

Caveat on Using 'Epistemologies' to Explain Experience and Behavior

Despite the attributes of Western epistemology described above, many people in our culture still care about nature, even love nature, and are willing to act accordingly. The term 'epistemology' is a grand generalization, implying that all individuals and philosophical traditions within the same culture share the exact same limitations and opportunities which their epistemology supports. It is evident that within Western culture a wide variety of alternatives and variations exist, some of which differ significantly from Western epistemology as described in this paper (e.g. alchemy and Christian mysticism). Nevertheless, these alternatives, including those that support caring and loving nature, seem to be in constant battle with our predominant epistemology.

The Relationship Between Humans and Nature: Andean Epistemology

Well, this puts us in a bit of a fix. In the previous chapter the point was made that the Andean Epistemology (actually any epistemology other than one's own) cannot be adequately conveyed with words. Three reasons were given for this: 1) that words co-evolve with an epistemology and thus the words found in one epistemology may not fit the words found in a different epistemology; 2) that words get their meaning primarily through their reference to experiences found in common among the speakers, yet the experience of reality in one epistemology may not correspond with experiences found in another epistemology; and 3) that the Andean epistemology wraps the everyday world together with the sacred, and talking about the sacred is difficult, and usually kills it. So, let me pause for a second while I grab a mallet and a stake, for a verbal description of the Andean epistemology is needed if we are to describe how it differs from Western epistemology. As it cannot--for the reasons given above--be an exact description, it would be best to consider it to be a metaphor (which in essence it is).

The following metaphor--which offers a description of the Andean epistemology using the concepts found in Western epistemology--was pieced together over the years from statements made by the paq'os and from my own ineffable experiences. In the seven years I have been learning the Andean epistemology, no paq'o ever sat me down and said 'Listen, this is what it is all about, and this is what you need to believe'. Perhaps the largest difference between Western epistemology and that of the Andes is that in the former, knowledge is based upon thought, and in the latter, knowledge is based upon experience. Consequently, the paq'os' statements about their epistemology were always offered within the context of opening the door to some experience, rather than as a description or explanation directed toward the mind.

The paq'os offered an 'energetic' model of reality where everything that exists consists of interconnected filaments of energy. The Cosmos itself consists of a vast web of these filaments, and where these filaments join together to form a node there exists what we experience as an object. This metaphor contains several important ramifications. The first is that everything in the universe is ultimately interconnected. This establishes a type of kinship among all that exists. The second ramification is that the universe is seen as one, unified thing. Compared to Western epistemology--which tends to view the universe as a collection of separate objects--the Andean metaphor views the individual as one part of a much larger system, in a role that might be comparable to that of one finger on a much larger body. This, in turn, puts the individual in a functional relationship with the rest of the Cosmos. The third ramification of the metaphor is that the distinctions between what we categorize as animate and inanimate objects, and between more sophisticated and less sophisticated creatures, are less important in the Andes, for while the nodes may differ in their dynamic organization they are all essentially variations of one theme. The fourth and final ramification is that humans are not all that important in this Andean world-view, particularly compared to such incredible entities as the node we call the planet Earth and that the Andeans call the Pachamama. Let us move on to the nature of consciousness in this metaphor of the Andean world-view. In Western epistemology we are given the choice between believing that consciousness is: 1) transcendent to the natural world (like a soul that resides in the brain); 2) nonexistent (except as a mere epiphenomenon of the brain); or 3) an emergent property of a system that is not conscious. In the Andean metaphor of a giant web of interconnected filaments, all nodes have consciousness, as does the entire web. This means that not only do people have consciousness, but so do trees, and stones, and mountains, and staplers, and automobiles. This consciousness, however, is not a transcendent spirit that resides in the object, it is something that is inherent in the nature of the stuff of which the object consists.

Consciousnesses other than our own, however, are impossible to comprehend as a Westerner, for we are offered only the experience of what it is like to be a human with a consciousness. Although neither philosophy nor psychology have arrived at an adequate definition of what consciousness is (the problem may be portrayed as a knife trying to cut its own edge), we seem to believe that it must be like what we experience. Our experience, however, blends together the experience of being conscious with the experience of being human. Only when one connects with and experiences another type of consciousness, for example, by connecting your energetic filaments to that of a tree and discovering the incredibly beautiful and sacred way the tree experiences sunlight, does the idea of other types of consciousness make sense or seem even plausible.

In a Cosmos where nature consists of other types of consciousness, and where interconnecting filaments allow communication with these other consciousnesses, true relationships between people and nature can exist; two-way relationships; intimate, loving and mutually supportive relationships. The Andean people, at least the Andean *paq'os*, live in a world where they love the earth (the '*Pachamama*'), and she loves them back. They live in a world where the wind and the stars and the rivers and the trees and the llamas and the *alpacas*--where all of nature--are family.

To avoid giving only half the picture, it should be noted that there are malevolent as well as benevolent aspects of nature. The Andeans are similar to Taoists in their view of the necessity and complementary nature of opposites (for more details on this aspect of the Andean Cosmovision see Palomino, 1993). Our training from the *paq'os*, however, always involved relating with the benevolent aspects of nature, and thus I have little to say about the malevolent ones.

This energetic-filament-web metaphor also allows us to describe how health is viewed within the Andean system. Health is seen as being a matter of harmony. When people have harmony between the levels of their existence (e.g. between their body '*llankay*', their heart '*munay*', and their intellect '*llachay*'), and harmony between themselves as individuals and the rest of the Cosmos (i.e. nature), then health is likely to follow. One of the roles of a *paq'o* is to assist people to reach a state of harmony, and the *paq'o* has allies in nature to assist in the process. This again ties the people intimately and lovingly to the benevolent aspects of nature. They (the people) reciprocate with gifts of love (offerings called '*despachos*').

An approach to health that has harmony as an underlying theme has interesting implications. First, there are an infinite number of ways to come into harmony with another frequency. This implies that each one of us can come into harmony with nature in our own unique way. And second, the determination of whether frequencies are in harmony and or not is based upon aesthetics. Thus we see a connection between nature, beauty, and health. And health, as Bateson noted in the citation given in the previous chapter, is curiously associated with the sacred.

A crucial difference between Western and Andean epistemologies is that the latter does not assign consciousness, the mind, spirituality, the sacred, or values to a transcendent, supernatural realm, nor does it dismiss them as mere epiphenomena of a biological machine. They are there, in nature, in the web of energetic filaments we experience as the Cosmos; neither supernatural nor mechanical, just there--in nature--inseparable from nature itself.

Let us focus for a moment on the implications this has on the nature of values. In the Andean epistemology values are not obtained from an external, transcendent, deity (i.e. Western religion); nor are they the invention of the human brain (i.e. Western psychology); nor are they determined by market value (i.e. Western economy). Instead, values are inherent in the web of life, and the way they are discovered is through our relationships with the web of life.

The question remains, how do we actually discover the values that are inherent in nature? It is the same question as how do we find beauty? How do we touch the sacred? In the Andean approach the answers are found not in the intellect (the 'llachay') but in the heart (the 'munay'). The munay experiences the world in a way that the llachay cannot comprehend. Learning how to experience the world from the perspective of the munay is the task of the paq'o. It is in the munay that we may encounter values which spring from our interconnectedness with the rest of the Cosmos, values that arise from a source outside of the realm of thought, society, and religious dogma. If wisdom is the ability to understand and care about the effects of our actions on the larger systems of which we are a part, then the munay, which connects us to those larger systems without the intellectual division of self from other, may be a source of wisdom as well.

Teaching the Andean Epistemology to Westerners

Overview of the teaching approach

As described in the previous chapter, the primary attributes a Westerner needs to learn the Andean approach are; an open mind (to even try it), a quiet mind (to stop working exclusively through the intellect), and an open heart (to access the munay, and to be with the paq'os). With these attributes in place, learning to operate within the realm of the munay involves learning to notice and work with subtle distinctions that become available when consciousness is shifted to the munay. As our experience of reality is largely a product of what we pay attention to, learning to attend to new aspects of experience will eventually lead to a very different experience of reality.

The paq'os who worked with us (the groups I have been with in Peru) provided two avenues for making the changes we needed to make to operate within the munay. One avenue involved being in Peru, working with the paq'o's, in the physical presence of its sacred landscape (e.g. the Apus, the great spiritual beings who are the towering mountain peaks near Cusco). Connecting filaments with, even being in the presence of, a community (human and otherwise) that operate from the munay led to profound altered states of consciousness among the researchers. The second avenue involved learning processes, rather like meditations, that allow a person--without the assistance of a paq'o--to explore and benefit from their connection with nature. Either alone, or both together, provide a means for entering into the Andean epistemology.

This chapter will focus on the use of the meditative processes, as they have the advantage (and disadvantage) of not requiring a trip to Peru. I have taught these processes to students in the United States in a number of workshops and classes. The results--which will be described in more detail later--have been encouraging.

The Processes

The processes used to train students in the United States were drawn from a larger set of processes taught to us by Américo Yábar, the paq'o who served as a bridge between our two cultures, and who arranged for us to work with other paq'os in Peru. Numerous processes were learned, but most of them fell into two categories; those used to clean a person of 'hucha', and those used to connect an individual with various aspects of nature.

'Hucha' is a term that can be translated as 'heavy energy'. An example of hucha would be the feeling you have when you return home after a long and frustrating day at the office. It is important to note that the descriptive term is 'heavy', not 'negative' nor 'evil' energy. There is no moral imperative to rid

oneself of hucha, it is simply uncomfortable and thus undesirable.

Hucha can be removed, by yourself or by another paq'o, in a variety of ways. In all of the processes I learned, hucha--once removed--was given to the Pachamama. Some of us were a little leery of giving heavy energy to the Pachamama, but we were assured that she would take it willingly, that this is one of her acts of love to her children, and that it would do her no harm. It can readily be imagined (and when performed...experienced) that her role in these processes engenders a sense of being supported and loved by nature.

The second category of processes--those that involve connecting with some aspect of nature--are usually performed after your filaments have been cleansed of hucha. These processes involve connecting your filaments with the filaments of nature; e.g. a river, a tree, the sun, the wind. Two outcomes are gained through these processes: 1) they provide a way to connect with and experience the nonhuman consciousnesses found in nature; and 2) they provide a way to bring your energy into harmony with nature, which can lead to an improvement in physical, mental, and spiritual health. Various aspects of nature can provide specific benefits as well. The wind can help you to expand your consciousness, a river can clean your filaments and help you learn how to flow through life, the sun in the morning can help you focus your energy for the demand of the upcoming day, etc. Thus, again, the processes engender an experience of a natural world that loves and supports us.

The 'active ingredient' in all of these processes, the way in which they are actually accomplished, is through something that was translated from Quechua to Spanish to English as the word 'intent'. We were offered many definitions of this term, some of which seem similar to the term 'will'. One pragmatically useful definition was to consider 'intent' as equivalent to 'sincere pretending'. This definition is useful for clueless or skeptical Westerners who wish to pursue the processes but are unsure of how to go about it, or are stopped by the objections of their intellect. The definition of 'intent' as 'sincere pretending' ties back to Campbell's (1950) discussion--introduced in the previous chapter--of the use of masks in sacred, indigenous, ceremonies. Pulling from the works of R.R. Marett and J. Huizinga (as cited in Campbell, 1950), Campbell makes the point that participation in the ceremony of the mask calls upon a suspension of that mode of thought (shared by both science and religion) which evaluates whether something is true or false, in favor of entering a 'play sphere'. Entering this play sphere allows the ceremony of the mask (or in this case the Andean meditative process) to evoke an experience of the sacred. The underlying assumptions of the process may or may not be 'true'--that whole consideration is irrelevant--what is important is that the experience which results from this 'sincere pretending' is quite real. In Western science 'what is real' is determined by the scientific method. In Western religion 'what is real' is based upon scriptures. In the Andes if have found that 'what is real' is what is experienced when I operate through my munay. After many experiences of the munay an experiential 'description' of the world began to emerge which feels as real to me there as the reality I experience back in the United States operating as a scholar and scientist.

Along those lines, it is important that not too much be made of the processes themselves. There are thousands of processes that exist or can be invented that support an exploration of the Andean epistemology. They are important because they lead to significant experiences, but the processes themselves are not significant, except to the degree to which they maintain a specific cultural tradition. We were warned by the paq'o Américo Yábar not to turn the processes into a ritual, for a set of rituals is apt to be turned into a religion, and once you have a religion then you start drawing boundaries and excluding people; and when that happens, you have lost the essence of the Andean approach. Thus the role of the processes, both in Peru and in subsequent workshops in the United States, has solely been to provide a doorway to explore the Andean epistemology.

One last point needs to be made before leaving this discussion of the Andean processes, and that is to place the processes within the larger contextual framework of 'ayni' (the Quechua term for 'reciprocity'). Ayni requires that giving be accompanied by receiving, and that receiving be accompanied by giving. The processes described above call upon the benevolent aspects of nature to nurture and support us. This, in turn, calls upon us to nurture and support nature. This cannot be separated from the processes we use to call upon nature, we give as well as receive, the heart insists.

It is clear to me that the heart (actually the munay) is what it is all about. On my fourth trip to Peru (three weeks ago as I write this) the shifts in the experienced location of my consciousness back and forth from my llachay to my munay became increasingly obvious to me (and to the paq'os with whom I was working). In looking back over the years I see this as something I was aware of before, but on this last trip it reached a threshold where it became fundamental to what I am doing. Psychology generally considers consciousness to be the product of the brain. In this view consciousness can become aware of the area around the heart but it cannot actually move there. The statement that my consciousness moves to my munay, however, fits my experiences better than the statement that my consciousness becomes aware of my munay. I believe that within the Andean epistemology the former statement is not only possible but is the more accurate description. The processes I have learned and my experiences in Peru essentially have served to introduce me to the wonders of my own munay and its interconnections with the Cosmos. I haven't quite settled down from the upheaval of my most recent trip to Peru, however, and time and experience may cause me to look at the situation in yet another way.

Teaching the Processes

Teaching the processes I was learning in Peru was not part of the original intent of the research project. The first step in that direction came from the paq'o Américo Yábar. While sitting in a cafe in Cusco, Peru, after two weeks in the high Andes working with a number of paq'os, Américo suggested to us that it would be a good idea for us to start teaching what we had learned to people in our country. This suggestion felt congruent with my evolving experience of the research project. I had started the project with a focus on the therapeutic effects the training was having on me, and with an interest in creating a theoretical model that could contribute to the field of psychology. As I continued, however, my original theoretical understanding that I am an element in a larger natural system evolved into the actual experience of that relationship. The experience was not intellectual, yet obviously transferable in that the paq'os and Peru had opened the door for me to experience it for myself. Partly, I think, due to the continual focus on ayni, the issues of my own mental, emotional, and spiritual health broadened out to include, in addition, issues of the health of others and the health of the larger natural systems of which I am an inseparable part. Teaching people how to actually experience their connection with nature was a natural child of this change within myself.

My first chance to teach the Andean approach arose when four students, who had attended a colloquium where I had shared some my slides and stories from Peru, asked if I could teach them some of what I had learned there. We set up a schedule of meeting for three hours a day, for a total of five days, spread out over the following summer vacation. I found that by the end of fifteen hours of teaching that I had pretty much covered all I could share. We still continue to meet every month or so to work together, but as equals now as I have stepped out of the role of the teacher. Since then I have experimented with a variety of formats for the workshops, working with approximately 70 participants. I have also included a brief introduction to the processes to hundreds of students who have enrolled in my course on applied systems theory.

Challenges in Teaching the Processes to Westerners

I describe in the next, and last, section of this chapter some of the results from the training sessions that I have offered. First, however, as part of the description of the trainings themselves, I would like to address some of the challenges that have arisen in teaching the Andean processes to Westerners.

Individual Challenges

1) **Animism.** The processes and descriptions of the Andean epistemology seem to propose an animistic view of reality; where the earth, the trees, the rivers, the mountains, the stars have transcendent spirits residing within them. This can be a major obstacle for participating in the processes, particularly for people with a scientific background. It was a particularly thorny challenge for myself in the beginning of my exploration of Andean epistemology.

My first solution was to reframe the Andean epistemology into the Western psychological construct of 'therapeutic metaphors', a subject in which I have extensive experience. This proved to be entirely unsatisfactory for the reasons already described in this paper, for I had translated a different epistemology--one that is focused on the experience of the *munay* (heart)--into the intellectual structure of Western *llachay* (mind). My heart rebelled against that solution. I kept working. After additional experiences in the Andes, and a lot more thinking, I arrived at the intellectual framework that became Chapter One of this paper.

In the workshops and classes I use two approaches to help people put aside their skepticism of animism long enough to have the experiences being offered by the processes. In a brief introduction at the beginning of the workshop I explain the Andean metaphor of the Cosmos (described above) and contrast it to the Western idea of animism. When it comes time to teach the processes themselves, I introduce the concept of 'intent' and use the definition of it being 'sincere pretending'. So far this approach seems to work and I have yet to have anyone not participate due to the belief that this is just plain silly.

2) **Faith.** The Andean epistemology offers a world-view that is very different than that presented in the Bible. This is not a conflict of dogma, as the Andean epistemology I have experienced has no dogma (it is instead a route to the sacred based upon experience rather than upon a set of beliefs). It is instead a difference between an experiential approach and a dogmatic one. But even when this distinction is drawn (i.e. that this is not a conflict in dogmas), an experiential approach to the sacred can in itself can be threatening to dogma.

Surprisingly, a conflict between the participants' faith and their willingness to experience the Andean approach has arisen only once. This lack of conflict is understandable in my workshops, as the participants self-selected to be there based on knowledge of what would be offered. It is a little more surprising that there has not be a problem among the hundreds of students who were given a taste of the Andean processes in my applied systems theory class. Here, however, the processes are introduced at the end of the semester, within a contextual framework that I have been building for months. The only time a conflict over religion has arisen was in a guest presentation for another class, where I had incorrectly assumed that all the students there had self-selected to be in that class for this type of experience, and consequently I had not build up an appropriate conceptual framework.

I do imagine, however, that outside of these constraints (self-selection or extensive presentation of an acceptable framework) there could arise more conflict between Western religion and the Andean epistemology. As the Andean epistemology, however, does not contain a moral imperative to be forced upon others, there is no reason to provide workshops for those who would find it in conflict with their

faith.

3) **Teaching from the heart.** This is a personal challenge that I have faced as a teacher of the Andean approach. For many years my teaching as a professor has been of a highly intellectual nature. It is impossible, however, to teach the Andean approach solely from the head (llachay); the heart (munay) must be involved as well. Being willing to, and being able to, open my heart to my students, to be a whole person standing there and not just a talking head, has been a long and vulnerable process.

It may be worth repeating a point made earlier in the paper, in Western terms operating from the heart is often equated with paying more attention to one's emotions. But emotions are tied closely to the intellect, as emotions can be mediated by cognitive processes (e.g. picturing a loved one in someone else arms and then feeling depressed or jealous). In Andean terms operating from the heart means to operate from the munay, and this is not the same thing at all.

Teaching the processes of the munay requires that I operate from the munay myself. To accomplish that I must move out of the familiar and safe territory of intellectualization. I find it interesting, and congruent with my understanding of the importance of relationship in the Andean approach, that when I can access munay in the context of training others that my experience of it, and their experience as well, becomes quite strong.

Societal Challenges

'Tree hugger' and 'nature worshipper' are two of the most demeaning labels that can be used to disqualify the viewpoints of a person proposing an environmentally supportive perspective. Although the use of these labels constitutes fallacious reasoning ('argumentum ad Hominem abusive': see Copi, 1972), they carry such a connotation of ridicule that the temptation to argue against the labels--even if they fit--is hard to resist. From the viewpoint of Western epistemology, loving a tree or worshipping nature is ludicrous. Within the Andean epistemology, however, loving nature and finding the sacred through that love of nature, is encouraged. This brings us to a question that is fundamental to the purpose of this research project, how can elements of one epistemology be incorporated into another without societal conflict arising from their differing assumptions and values?

Part of the answer to this question lies within the Andean approach itself. The paq'os we worked with drew a distinction between the 'paña', which is the right side of the body and is concerned with 'domesticated energy', and the 'lloqe', which is the left side of the body and is concerned with 'undomesticated energy'. Metaphorically speaking the paña is the world of the sheep and the chicken; while the lloqe is the world of the puma and the condor. The paña organizes our operating within the everyday world of society (Andean or European), going to work, buying airline tickets, etc. The lloqe, however, is the realm of the great mystery that lies beyond our socially constructed reality. The experiential approach, the meditative processes, work in the realm of the lloqe. Epistemologies may differ concerning assumptions about whether such experiences have value or even exist, but the experiences themselves are beyond the intellectual constraints of the epistemologies (which reside in the paña).* Consequently what is gained in learning the meditative processes lies outside of politics and social constructs. As long as you are willing to have the experience (see the section above on individual constraints) you are operating orthogonally, as it were, to the world of the paña, and thus there is no inherent need to butt heads with Western epistemology.

The other part of the answer on how to incorporate elements of Andean epistemology into our own involves a willingness to go 'meta' to epistemologies, to be willing to examine both our own epistemology and that of the Andes. That is the nature of this paper. The goal is not to choose which

epistemology is better, but to integrate the wisdom and heart demonstrated by the paq'os with the intellect and technology of the West.

Results

For myself, and for the vast majority of the participants in the workshops, learning and applying the Andean meditative processes has led to a positive change in attitudes, values, and ethics towards nature. These changes are the natural result of developing a relationship of intimacy, care, and love with nature. Indeed, the development of this relationship may be seen as being the underlying point in all of the Andean processes.

This development of a more loving and caring relationship with nature is likely to lead to changes in behavior towards being more involved in protecting the environment. Data have not been collected on the workshop participants, but I can speak of my experience.

It took a couple of years, but while sitting huddled with the paq'os on top of a hill under the stars of the night sky of Peru, my intellectual understanding that the Pachamama is metaphorically our mother, finally was shifted to a direct experience of her immense love. It was a life changing experience. I have since become more actively involved in being part of the solution to the earth's problems. This paper, and the organization that has sprung from it, have been part of this shift. Rather than becoming more angry at the destruction of the environment, I have instead become more concerned and caring. This, I think may be the difference between a conflict of ideologies (which can be quite violent), and stepping in to help a loved one in distress.

To date, all of the information gained about the effects of the workshop have come from subjective reports from group and individual discussions. This research project is a work in progress, and the quality and quantity of information will change over time. It is possible that this project will move to gathering quantifiable results in the future, but some major issues of both philosophy and the heart may stand in the way.

The philosophical problems that arise in designing an experiment to test the effectiveness of these workshops can be found in both the independent and dependent variables. The independent variable in such an experiment would be to have the individuals do the meditative process as described. An insurmountable barrier in this scenario is that it is impossible to establish an 'independent variable check'. The problem can be restated to say that there is no way to prove that the individual actually is carrying out the meditative process (i.e. the independent variable), they could very well be doing some other internal process (e.g. daydreaming). It would be illogical to use the results of the process (e.g. a physiological shift to a more relaxed state, or a self-report of a more loving relationship, or a behavior shift towards more recycling) as proof that the individuals actually did the process, for it is circular reasoning to use the same measurement to both prove that the independent variable was applied as well as to demonstrate the effects of the independent variable. All experiments that use internal processing as an independent variable face this problem, for how can you prove they did what you told them to? If you can't, how can you conclude that the process is what led to the result? The only resolution is to say that participating in the workshop is the independent variable, and leave unresolved what about the workshop actually made a difference.

The selection of the dependent variable also poses a problem. A subjective experience is a poor dependent variable as there is no way to directly measure it. A typical compromise is to use self report, often in the form of a written instrument. The particular problem with using self-report in this study is that both the questions and the responses must fall within the vocabulary of Western epistemology.

Perhaps a better approach would be to use self-report not to measure the experience, but to measure the effects of the experience on constructs that do fall within Western epistemology. For example, measuring changes in 'attitudes towards nature'. It would also be reasonable to measure how the workshops affect the participants' behaviors, such as increased recycling or more active participation in environmental causes.

The issue of the 'heart' in the solutions proposed above is that of the pathology of talking about (or measuring) the sacred. As stated by Bateson in the previous chapter, to talk about the sacred is to turn it into a pathology or to make it go dead. Standing outside of a cathedral after a religious ceremony, with a survey, asking people to rate on a scale of 1-10 the level of their spiritual experience does not seem appropriate (to anyone but the scientist). And worse, asking the question seems to kill the experience of the sacred within the respondent as they search for an answer. In a larger perspective, such research threatens to reframe the entire experience of the sacred as actually being utilitarian in nature. If we ask workshop participants how much their behavior towards the environment has changed as a result of the workshop, they may now see their sacred experience as being a non-sacred manipulation of their behavior. And worse, when the sacred is manipulated for utilitarian purposes, it may even turn into the profane (Bateson, 1991a)

What we face here is simply, again, the clash of differing epistemologies. If we have an experience within the Andean epistemology, to what sense do we destroy it by trying to prove it within the guidelines of our own epistemology? Epistemology is a culture's viewpoint of what is knowledge and how its validity is established. That is exactly where the difference lies between the Andes and the United States, between experiences of the munay and constructs of the intellect. But if we can't translate what the Andes has to offer into terms that Western epistemology accepts, does it have any value or credibility in our culture?

At this point I suspect that to design an experiment that would serve to give the Andean approach Western credibility would require bending both the Andean epistemology, and the experimental method, to the point where neither would be true to itself. This paper, however, is just the beginning of a dialog with the minds and hearts of a large and resourceful audience of colleagues. Perhaps some solution will emerge. My predilection at this point is to simply continue with the workshops, notice my own subjective experience, and speak with others about theirs. There is plenty of motivation to keep going, it involves taking care of loved ones (e.g. the Pachamama).

Conclusion

After seven years of work this project still seems in its infancy, but perhaps that is because it continues to unfold and we have no sense of where it will lead. The paq'os say that the bundle of energetic filaments that make up a human being consists of the three levels of; llankay (the body), munay (the heart), and llachay (the intellect). For there to be health the three centers must be in harmony with each other, and in harmony with the rest of the Cosmos. The same may be true for humankind; we need to bring into harmony our technology (an expansion of the body), our intellect, and our heart, and they need to harmonize with the natural world in which we live. The Andean approach (and that of many other cultures) offers us knowledge of the munay, not as the whole solution, but as a crucial piece of the solution. In the West we have the technological capability and intellectual skills to alter our course, to nourish the web of life on the planet rather than destroying it, while creating a life of quality for our species; what we need is the heart to do it.

Appendix: Basic Principles for a 'Union of Concerned Psychologists'

The Problem

Human behavior poses a significant threat to the quality of human existence on this planet, to the health of humankind and other life forms, to the survival of millions of species, and to the preservation of the beauty of the natural world in which our species evolved. To put it a bit more bluntly, human behavior is destroying the life-supporting capabilities of the planet, reeking a holocaust upon life in general, and putting into jeopardy the survival of future generations. Support for this viewpoint can be found in: "Population Growth, Resource Consumption, and a Sustainable World" (a joint statement by the US National Academy of Sciences and the Royal Society of London, 1992); the "World Scientists' Warning to Humanity" signed by over 1600 of the world's leading scientists, including the majority of the Nobel laureates in the sciences (Union of Concerned Scientists, 1992); the "World Scientists' Call for Action", signed by over 1500 scientists representing some 65 countries worldwide, including 104 living Nobel Prize winners in the sciences and 60 US National Medal of Science winners (Union of Concerned Scientists, 1997); and the writings of such individuals as Cowell (1990); Kellert & Wilson (1993); and Wilson (1984, 1992).

Elements of the Solution

1. As human behavior is the cause of the problem, the field of psychology should play a major role in addressing the problem. The problem is of such importance, severity, and complexity that all sub-disciplines within psychology need to address it at a meaningful level immediately.
2. Psychology should recognize that the current, virtually exclusive, focus on science for the sake of science is extremely unlikely to provide a solution to the problem any time soon. Priorities and effort should be shifted within the field of psychology towards taking a much more active, applied, role in solving the crises.
3. For reasons of focus, identity, and credibility within the field of psychology this organization will be called the 'Union of Concerned Psychologists'. We would like to stress, however, that an understanding of the nature of the problem and the development of possible solutions requires a much larger, multidisciplinary perspective.
4. While the focus of psychology's contributions to this endeavor will be on humans and human behavior (which is both the cause and the most likely cure for the crises), the system whose health is paramount in our concern is that of the earth as a whole. The system of life on this planet created the human race, we are an inseparable piece of this larger system, and we depend upon it for our continued existence. For these reasons we support the principles of Deep Ecology (see Naess, 1993).
5. It is important that we avoid the mistake of working to 'make the world safe for our pathologies.' (Bateson, 1991b). We make the world safe for our pathologies when we reduce the negative consequences of a problem behavior rather than addressing the behavior itself, by alleviating the symptoms the problem is allowed to worsen.¹⁹ We advocate, instead, that the systemic consequences of efforts to resolve the crises must be considered, at least to the current limits of our wisdom.
6. In pursuing these goals two ethical considerations must be kept in mind.
 - a) The end does not justify the means. The goal of protecting the planet does not justify unethical means for accomplishing it.
 - b) The means do not justify the end. The scientific method is elegant and praiseworthy, but

engaging in science for the sake of science is not appropriate if it leads to the destruction of the planet.

Concrete Suggestions:

1. Look for ways to bring technology, intelligence, and wisdom (i.e. heart) together to address the threat to our planet. Psychology, as a discipline, largely lacks heart (as defined in the main body of this paper). Some indigenous cultures have great resources of heart and wisdom. Perhaps a 'council of elders' from indigenous cultures could be established as a resource for psychology. Such a council could; 1) provide a means for the wisdom of indigenous people to enter the field of psychology; 2) provide a means for resources to flow back into the indigenous cultures; and 3) deliver the message that indigenous people and their culture have both extrinsic and intrinsic value. This will require rather rapid work to help these indigenous people survive the threat of being swallowed up in the rapidly growing, global. McVillage
2. Work with the Union of Concerned Scientists, the American Psychological Association and the American Psychological Society to open dialogs on the proposal that psychology play a much more important, and immediate, role in resolving the current and impending environmental crises.
3. Provide support for research into this area.

References

- Abram, D. (1995). The ecology of magic. In T. Roszak, M. E. Gomes & A. D. Kanner (Eds.), *Ecopsychology* (pp. 301-315). San Francisco: Sierra Club Books.
- Ashby, W. R. (1970). Analysis of the system to be modeled. In R. M. Stogdill (Ed.), *The Process of Model-building in the Behavioral Sciences*. (pp. 94-114). New York: W. W. Norton.
- Atfield, R. (1983). *The ethics of environmental concern: Man's domination and the Judaeo-Christian Heritage*. New York: Columbia University Press.
- Bateson, G. (1972). *Steps to an ecology of mind*. New York: Ballantine.
- Bateson, G. (1979). *Mind and nature: A necessary unity*. New York: Bantam.
- Bateson, G. (1991a). Ecology of mind: The sacred. In Donaldson, R. E. (Ed.), *A Sacred unity: Further Steps to an Ecology of Mind*. (pp. 265-270). New York: HarperCollins.
- Bateson, G. (1991b). Symptoms, syndromes, and systems. In Donaldson, R. E. (Ed.), *A Sacred Unity: Further Steps to an Ecology of Mind* (pp. 295-298). New York: HarperCollins.
- Bateson, G. (1991c). The case against the case for mind/body dualism. In Donaldson, R. E. (Ed.), *A Sacred Unity: Further Steps to an Ecology of Mind* (pp. 291-293). New York: HarperCollins.
- Bateson, G., & Bateson, M. C. (1987). *Angels fear: Toward an epistemology of the sacred*. New York: Macmillan.
- Campbell, J. (1950). *The masks of God: Primitive mythology*. New York: Viking.
- Campbell, J. (1990). *Transformations of myth through time*. New York: Harper and Row.
- Campbell, J. & Moyers, B. (1988). *The power of myth*. New York: Doubleday.
- Capra, F. (1983). *The turning point*. New York: Bantam.
- Capra, F. (1996). *The web of life*. New York: Doubleday.
- Copi, I. M. (1972). *Introduction to Logic* (4th Ed.). New York: MacMillan.
- Cowell, A. (1990). *The decade of destruction*. New York: Henry Holt and Company.
- Davis, E. (1998) *Technosis: myth, magic & mysticism in the age of information*. New York: Random House.
- Davis, W. (1996). *One river: Explorations and discoveries in the Amazon rain forest*. New York: Simon & Schuster.
- Hollister, C. W. (1990). *Medieval Europe: A short history*. (6th ed.). New York: McGraw-Hill.
- Keeney, Bradford P. (1983). *Aesthetics of change*. New York: Guilford Press.
- Kellert, S., & Wilson, E. O. (Eds.) (1993). *The biophilia hypothesis*. Washington D. C.: Island Press.
- Kuhn, T. S. (1970). *The structure of scientific revolutions*. (2nd ed.). Chicago: University of Chicago Press.
- Naess, A. (1993). Identification as a source of deep ecological attitudes. In List, P. C. (Ed.), *Radical Environmentalism*. Belmont, CA: Wadsworth.
- Plotkin, M. J. (1993). *Tales of a shaman's apprentice*. New York: Penguin.
- Palomino, S. (1993). Three times, three spaces in cosmos Quechua. In Piacentini, P. (Ed.), *Story Earth: Native Voices on the Environment*. San Francisco, Mercury House.
- Piacentini, P. (Ed.). (1993). *Story Earth: Native Voices on the Environment*. San Francisco, Mercury House.
- Union of Concerned Scientists (1992). *World scientists' warning to humanity*. Cambridge, MA. Retrieved July 14, 2000 from the World Wide Web: <http://www.ucsusa.org/resources/warning.html>
- Union of Concerned Scientists (1997). *World scientists' call for action*. Cambridge, MA.

- Retrieved July 14, 2000 from the World Wide Web: www.ucsusa.org/warming/gw.worldsci.html
- U.S. National Academy of Sciences and the Royal Society of London (1992). Population growth, resource consumption, and a sustainable world. A statement issued by the International Conference on Population, Natural Resources, and Development; Stockholm, Sweden. A copy of the statement was retrieved July 14, 2000, from the World Wide Web: www.spiritone.com/~orsierra/rogue/popco/warn/warn01.htm.
 - Watts, A. W. (1958). Nature, man, and woman. New York: Vintage Books.
 - Webster's New World Dictionary. (2nd college ed.). (1970). New York: The World Publishing Company.
 - White, L. (1970). The historical roots of our ecological crises. In *The Environmental Handbook*, New York: Ballantine.
 - Wilson, E. O. (1984). *Biophilia: The human bond with other species*. Cambridge: Harvard University Press.
 - Wilson, E. O. (1992). *The diversity of life*. Cambridge, MA: The Belknap Press of Harvard University Press.