Traditional Ecological Knowledge (TEK)/Indigenous Science and Communal Research Ethics

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Indigenous Science/ Traditional Ecological Knowledge (TEK) and Haudenosaunee Models

- A New Paradigm for Building Communal Values in Health and Environmental Research
Indigenous or Native Science (Cajete 2000)

“Native Science” is a metaphor for a wide range of tribal processes of perceiving, thinking, acting and ‘coming to know’ that have evolved through the human experience with the natural world. One must participate with the natural world; be open to the roles of sensation, perception, imagination, emotion, symbols, and spirit as well as logic, concept and rational empiricism.

Native Science includes subjective experience:

- To gain inner sensibilities
- To experience the essences of nature
- To acquire metaphoric and transcendent understandings of experience
TEK and Indigenous Science as Contextual and Holistic

(Kimmerer 2002:436)

- TEK manages pluralistic and nonlinear perspectives;
- emphasizes community contextual knowledge: detailed observations of population biology and species interactions;
- detailed understandings of human and natural systems and their multidimensional contexts over time;
- integrates scientific and cultural concerns of complex systems in a holistic manner.
Interconnectedness and Interrelated Meanings of Causality
(Cajete 2000, Peat 1994)

- Indigenous science is informed through wisdom which is dynamic and interconnected, grounded in moral, ethical and spiritual dimensions

- It gives power to both the subjective and the objective (interrelated meanings of causality)

The identification and structural examination of a fruit may be no less important than its uses within a context of a particular family or community and will include stories relating to its use as a food source, its ceremonial uses, its complex preparation processes, and the traditional accounts of its uses, its kin affiliations, etc. The loss or contamination of the fruit is a social, cultural and spiritual harm as well as physical harm. The western scientific perspective, in a generalized observation of these fruits would not include the interrelated meanings of the fruit - the moral nature of its matter which cause us to lose the interconnectedness of knowledge and nature that we need to understand.
Communal Values/Ethics in Indigenous Science

- The self and community are part of a natural collective or a web of relations with human, natural and spiritual forces; all requiring balance and harmony (Cajete 2000).
- Health research models identify webs of relationships impacted and involved in community health protection (English et al. 2004).
- They build relationships with key community/external stakeholders to strengthen community capacities and create beneficial interdependencies among stakeholders for community health (English et al 2004);
- These models build trust and mutual learning from diverse stakeholders; and
- They integrate ceremonial, ritual, artistic, and other symbolic activities with community programs for education, outreach and research for health protection (English et al 2004).
Holistic Risk Assessment – Arquette et al. (2002) Haudenosaunee Model:

- Incorporates “Good-Mind Approach (Akwesasne RAC, 1996)”
- Expanding Research End-points
  - Assessing both qualitative and quantitative impacts: Akwesasne-Mohawks use an integrated risk assessment framework that includes impacts to humans, the natural world, cultural, social, subsistence, economic and spiritual practices.
  - Subjective data collection through community interviews and other sources must be integrated with quantitative data collection for more robust research findings.
Haudenosaunee
Democratic/Communal Model

- Expanding Research Questions
  - Culturally-based and community-specific definitions of health and risk must be determined in collaboration with community members.
  - An expanded definition of health will require qualitative data collection on social, physical, and cultural determinants of health and how toxic contamination affects these. Such determinants include: safety of work environments, social supports, equity, language, respect, and relatedness with the natural world.
Partnership Processes of Research

Akwesasne and Canadian Tribal Groups Require Community Partnership Control with Academic Researchers:

• Community Advisory Committees; hiring Native researchers, consensus decision-making, resource-sharing in research budget, community consent procedures for research data dissemination.

• Integration of Ceremonial/Spiritual Practices: Respect, Building Trust, Data Collection, Knowledge-Sharing

• Specialized Strategies for Communication, Participation and Respect for Multidisciplinary Approaches
Improved Native-based Benefits to “Expert-Driven” Model

- Research Results Include Interdependent, Relational and Moral Aspects of Contamination Impacts
  - Knowledge collection of environmental health impacts and natural resource uses are expanded to build a deeper understanding of the relationality, morality and interconnected effects of natural resource and technological activities of human/nonhuman populations.
Native-based Benefits (cont’d)

- Research Data is More Robust than Current Outcomes
  
  • These indigenous approaches teach us new research practices/methods for acquiring qualitative, community-generated data that highlight socio-cultural and spiritual relations, impacts, and restoration needs. This data is far more robust than current methods.
Native-based Benefits (cont.)

- **Research Processes Improve Conditions of Social Inequities**
  - These approaches improve the social processes of research, overcoming the social inequities in the vertical, “expert-driven” western scientific practices; requiring them to respect and value “community” processes, knowledge and needs. This helps to strengthen, restore and preserve the horizontal, moral ties of community in its engagement with vertical corporate and government institutions.
References:

- Arquette, Mary et al. “Holistic Risk-based Environmental Decision-making: A Native Perspective”, *Environmental Health Perspectives*, Environmental Justice, 110 (suppl 2) 2002-04-0
- English, KC, Wallerstein, N, Chino, M et al. “Intermediate outcomes of a tribal community public health infrastructure assessment”, Ethnicity and Disease 14, 3 Supplement 1