From Interdisciplinary to Transdisciplinary Research: A Case Study

Wendy Austin
University of Alberta, Edmonton, Alberta, Canada

Caroline Park
Athabasca University, Athabasca, Alberta, Canada

Erika Goble
University of Alberta, Edmonton, Alberta, Canada

The specialization of contemporary academia necessitates the adoption of a multidisciplinary approach to study topics that cross multiple disciplines, including the area of medical ethics. However, the nature of multidisciplinary research is limited in some regards, further requiring some researchers to use interdisciplinary and transdisciplinary approaches. The authors present as a case study a research project in bioethics that began as an interdisciplinary study and which, through the research process, moved to being a transdisciplinary study in health ethics. They outline not only this transformation but also the strengths and difficulties of transdisciplinary research in the area of ethics.

Keywords: health ethics; case study; interdisciplinary research; transdisciplinary research; relational ethics

In contemporary academia there is a tension between disciplinary specialization and the need to acknowledge the complex reality of the 21st century. The specialization that led to strong disciplinarity in the 19th century (Lawrence & Després, 2004) is now coexisting with multidisciplinary approaches (representatives from several disciplines, each contributing particular knowledge and methods from their respective fields) that go beyond the expertise of any one discipline. The outcomes of such cooperative processes are generally additive in nature and give rise to both broader, plural perspectives and, potentially, to new subdisciplines (Dogan & Pahre, 1990). Cooperative processes are not sufficient, however, when an integrative level of understanding is sought. Then, interdisciplinary work, the exploration of questions through the integration of knowledge and techniques of multiple disciplines into common ground (Kokelmanns, 1979), is required. In this approach the assumptions of each discipline may be called into question and new assumptions developed. Transdisciplinary research occurs when the collaborative process is taken one step further, often spontaneously emerging from interdisciplinary research when discipline-transcending concepts, terminology, and methods evolve to create a higher level framework and a fundamental epistemological shift occurs (Giri, 2002; Max-Neef, 2005). This step requires mutual interpretation of disciplinary knowledge (Gibbons et al., 1994) and a coherent reconfiguration of the situation. A decade ago Nissani (1995), in an attempt to develop a working definition of interdisciplinarity, offered the metaphor of mixing fruits. Fruit (apple, mango, orange, etc.) may be served alone (disciplinary), in a fruit salad (multidisciplinary), or blended as a smoothie (interdisciplinary). Extending this metaphor to transdisciplinarity, one might imagine using the smoothie as the basis for a new dessert.

In this article we present a case study of a research project that began in 1993 as a means of illustrating the problems and possibilities of transdisciplinary research in health ethics. Funded by the Social Sciences and Humanities Research Council of Canada, the project was initiated as an interdisciplinary study with the purpose of articulating a foundational ethic for health care, initially termed an ethic of nurturance (Bergum & Dossetor, 2005). However, through the research process the project moved from being interdisciplinary to being transdisciplinary, with its outcomes forming a new
framework (renamed relational ethics) that has been further developed through subsequent research projects.

**Background: The Necessity of a New Approach in Bioethics**

The evolution of medical ethics to health ethics can be understood as ongoing development from a disciplinary to a transdisciplinary perspective. Until World War II, medical ethics was largely derived from the Hippocratic oath and was almost exclusively the domain of physicians (Pellegrino, 1999). Following the war, there was a pervading sense that medicine had become dehumanized, prompting academics and clinicians to turn to other disciplines, notably the humanities, theology, and the arts (Pellegrino, 1999). During the 1960s, medical ethics evolved into bioethics with the introduction of philosophy and law to its discourse (Bergum & Dossetor, 2005; Pellegrino, 1999). As changes in medicine increased the complexity of ethical issues, society was simultaneously also changing (Pellegrino, 1993). The emergence of the belief in the right for universal health care is a good example of this change (Greenfield, 1999). Moral philosophy became a means of addressing ethics in a pluralistic society (Pellegrino, 1993, 1999). Philosophers began speaking out about medical ethics issues, and bioethics emerged as an interdisciplinary field.

In the emergence of bioethics, the values of other health disciplines such as nursing were, for the most part, bypassed (Chambliss, 1996), although their practice became overtly encompassed within bioethics’ purview. Despite the proposal of various alternatives (such as an ethics of care, casuistry, and the reemergence of virtue ethics), bioethics remains dominated largely by principlism, which is embodied in the (bio)medical model (Flynn, 1991; López, 2004; Pellegrino, 1993; Turner, 2002). In her examination of the emergence of bioethics, Flynn argued that despite the incorporation of other disciplines, the hegemonic discourse in bioethics is one of biomedicine and individualism. Furthermore, she argued that by using the biomedical model, we perceive issues through a reified screen (we prefer the term lens), which prevents us from creating other interpretations of events. Other ways of understanding remain invisible. To illustrate and to attempt a challenge to this dominant model, Flynn juxtaposed a physician’s “detached” case presentation to that of a nurse’s “involved” story of the same patient situation. The nurse’s account “reveals the problems in communication, the helpless feelings of the staff, the poignancy of the baby, the distress of the mother, the heroism of the caretakers” (p. 154). The physician’s account is a succinct review of the medical situation: The mother is Black, has a history of alcohol and cocaine use, is an intermittent visitor to the hospital, has a short attention span, and “doesn’t have a clue to what is going on” (p. 153).

Such a disjunction between perspectives affects not only the assessment of patients and patient care but also the perceptions of the health care environment and what constitutes an ethical issue. According to Taylor (1997), a nurse ethicist, everyday ethical concerns, many of which are based in interdisciplinary team tensions and systemic issues, are invisible and do not get addressed as ethical issues when a quandary approach to health ethics dominates. For instance, a physician ethicist colleague of Taylor once queried the validity of an ethics consultation request “because no treatment decision seemed to be in dispute” (p. 68), leaving Taylor to wonder about the various perceptions among health care professionals as to what is appropriate for ethical study.

At the heart of this variation are fundamentally different disciplinary worldviews, which often lead to tension and conflict. Research has shown that nurses and physicians in the same practice environment select different situations and focus on different elements when asked to describe patient care predicaments. In a 1992 study in which nurses and physicians were asked to describe situations where they found it difficult to know the right thing to do, Udén, Norberg, Lindseth, and Marhaug found that nurses identified situations where they were restrained from acting in the way they believed was right. Furthermore, their descriptions had a personal tone, and physicians were often portrayed as a source of ethical conflict. Conversely, physicians rarely mentioned nurses, narrating, rather, episodes where they felt uncertain regarding clinical decisions. What nurses and physicians did seem to share was the sense of being misunderstood by their colleagues in the other discipline. Similarly, in his presidential address to the American Surgical Association, Greenfield (1999) identified both ineffective communication and differing perceptions of roles as the greatest problems facing the contemporary nurse–physician relationship.

Misunderstandings, outright conflicts, and competing ethical perspectives in the nurse–physician relationship often emerge in the form of everyday ethics within daily patient care. A 1996 sociological study confirmed that nurses experience everyday ethics as a thinly disguised turf war (Chambliss, 1996). *Everyday ethics* is defined by the Canadian Nurses Association (2002) as “the way
nurses approach their practice and reflect on their ethical commitments to the people they serve. It involves nurses’ attention to common ethical events” (p. 5). Whereas professional ethics is a common set of rules and obligations outlined by a professional body to be followed by its members (Beauchamp & Childress, 2001), everyday ethics is the actuality of implementing and enacting ethics in daily practice. According to Chambliss (1996), “nurses, being employees, deal not so much with tragic choices as with practical, often political, issues of cajoling, tricking, or badgering a recalcitrant system into doing what ought to be done” (p. 7). Nurses do not commonly approach ethical concerns from a rationalistic stance as a choice of binary options. They understand ethics less as “the display of one’s moral rectitude in times of crises” and more as “the day-by-day expression of one’s commitment to other persons and the ways in which human beings relate to one another in their daily interactions” (Levine, 1977, p. 846). In researching rural and urban nurses’ perspectives on ethics, Varcoe and colleagues (2004) found that nurses were disturbed by an evolving context shaped by the privileging of biomedicine, by technology and an emphasis on cure, by corporatization, and by a scarcity stance on resources. These nurses seemed to be looking for a distinct nursing ethic because existing theories did not speak to their needs (Varcoe et al., 2004). Similarly, physicians seem to be searching for guidance beyond the traditional ethical theories (Gillett, 1995; Nisker, 2004; Pellegrino, 1993). One charge is that in using the current bioethical model, “bioethicists misrepresent the ethical moment and lack a practical understanding of how moral values and ethical behaviors are embodied and lived by social agents” (López, 2004, p. 878). New, inclusive, collaborative ways of approaching contemporary ethical challenges across disciplines need to be found.

The Difficulties of Multidisciplined Collaborative Research

Collaborative research, whether multidisciplinary, interdisciplinary, or transdisciplinary, has an openness to a multiplicity of perspectives that holds significant promise for research teams, including those studying bioethics. Not only do collaborative forms of research more accurately reflect the world in which we live, but they also allow for the exploration of various positions (or lenses, if you will) that explain the situation at hand and/or point to possible solutions. Collaborative work, however, is rife with challenges (relinquishing “ownership” of knowledge; substantial time commitments; obstructive rather than supportive institutional structures; trust and process issues, including credit allocation) and uncertainties (the expected outcome is difficult to define; the journey itself depends on the synergy of group discovery; Denis & Lomas, 2003).

Illustrating the collaborative research process, including its inherent difficulties, Hinojosa and colleagues (2001) offered as a case study the work of an interdisciplinary team that collaborated in both research and service provision. The research team studied (interviews, observation, videotaping of team meetings) a clinical team working with one child in a hospital-based early intervention program over a 6-month period. The researchers used the five-step process for developing collaborative teams outlined by Dukeiwits and Gowin (1996): “establishing trust, developing common beliefs and attitudes, empowering team members, having effectively managed team meetings, and providing feedback about team functioning” (p. 16).

Time and space to meet were found to be key elements. “Teamwork is not magic, and simply ‘getting along’ or communicating information to one another does not constitute collaboration” (Hinojosa et al., 2001, p. 210). The research team’s collaboration was based on evolved common understandings, but this was difficult to achieve in the clinical setting. There were philosophical conflicts between the educators and the health professionals. Observations revealed an implicit hierarchy: Therapy trumped educational services. In reality, all team members were not considered equal. Although it was a functional team and members tried to get along, using strategies like humor, empathy, caring, and attempts to accept one another’s point of view, a true collaborative process did not occur.

Despite such difficulties, as demonstrated by Hinojosa and colleagues’ (2001) case study, the shift to transdisciplinary research is increasingly deemed important in contemporary knowledge production (Gibbons et al., 1994; Max-Neef, 2005; Thompson Klein, 2004) and enjoys a growing popularity among researchers. However, some, such as van Manen (2001), have raised concerns about transdisciplinarity and the orientation of this new knowledge production. van Manen noted that although it is more context sensitive, eclectic, and inventive than traditional interdisciplinary practices, it is driven by (and he cited Gibbons et al., 1994, who advocated for these purposes) marketability, social policy, and practical use. This is “problematic from the perspective of the
ethical value of human understanding” (van Manen, 2001, p. 850). It becomes, rather than an exploration of new sources of meaning leading to new and practical understandings, a simplistic and technocratic view of the world.

The difficulty of transdisciplinary research, then, lies not only in the question of how one manifests the process but also its evolving epistemological framing. These pose difficult and weighty challenges to researchers wishing to undertake a transdisciplinary process. Its worth, nevertheless, can outweigh such difficulties.

The Case Study

The principal investigators (PIs) of the research project were Vangie Bergum (a nurse) and John Dossetor (a physician). Teachers of ethics to students in the health sciences, Bergum and Dossetor questioned the concept of autonomy and its dominance within contemporary bioethics. Their view was that bioethics must encompass community responsibility as well as individual freedom, hermeneutic knowledge as well as rationality, and relationship as well as definitive principles. They wanted to expand bioethical perspectives through new attention to ethics as enacted in practice “to turn our thinking about ethics and our ethical commitments to how and where we experience them” (Bergum & Dossetor, 2005, p. 7). In other words, they wanted a new “screen,” a new “lens” through which to approach ethics in practice. A research group of 18 clinicians (from medicine, midwifery, nursing, psychology, physical therapy, social work, and pastoral care) and scholars (from anthropology, law, philosophy, psychology, and theology) was assembled to uncover an alternate way to understand and undertake ethical practice.

Research Method

Interpretive analysis was used by the research group to explore specific health care scenarios. These real situations were brought “into the room” through such means as personal testimony, documentaries, or written narratives. Each scenario was opened within the research group by discussion of perceived ethical issues and responses. There was an attempt to attend to the relational aspects of the scenarios. These discussions (3 to 4 hours in length, five to six times a year for 2 years) were audiotaped and transcribed as the research data. Thematic analysis by the investigators and the research group (including student assistants) was carried out and summary texts created.

A new ethics framework emerged. Titled relational ethics, the framework was inclusive of, yet extended beyond, other major approaches to ethics. The name relational ethics was chosen to make explicit that all ethics, including reason-based ethics, are grounded in relation, emergent from a relationship between the individual and the world. Informed by the concepts of interdependency, relational personhood, authentic dialogue, and the importance of community, the core elements of relational ethics are engagement, mutual respect, embodied knowledge, uncertainty/vulnerability, and attention to an interdependent environment. Results of the study describing this framework were communicated through articles in scholarly journals, a set of slides (art and photos) that captured ethical relations in health care practice, a drama (And They Want a Child; Bergum, Dossetor, & Madill, 1996) created by research group members and actors from a true story and produced as a video, and a book, Relational Ethics: The Full Meaning of Respect (Bergum & Dossetor, 2005).

Funding was received for a second phase of the project (1997), in which the researchers took the identified themes of relational ethics and explored them in three areas: mental health care, genetic counseling, and team relations of health care providers. The first author of this article, a member of the original research group, led the mental health care project with a new interdisciplinary team of clinicians. The original research group participated directly by contributing to analysis of results (e.g., during all-day retreats) and indirectly through advisement on procedural issues. After the second phase, further projects arose (e.g., moral distress of mental health practitioners, ethical relationships in forensic psychiatric settings).

Analysis of the Interdisciplinary Process

Addressing the Life Cycle of the Research

All collaborative research requires some basics: diversity in the team, shared objectives, shared space to meet (actual and/or virtual), and a strategic plan with identified parameters and outcomes. A core characteristic of interdisciplinary work is emergence (Evans & Macnaughton, 2004), with the emergence of new concepts, problems, or solutions being supported by a synthesis of diverse perspectives. Some vision, then, is needed in the creation of a research group. The mixture matters. Bergum and Dossetor (2005) explicitly sought to bring together a wide representation of perspectives. For instance, one member, a philosopher, was working with sociologists in the area of science and technology.
Another, a linguistic anthropologist, was a member of the Cree nation and able to offer an indigenous perspective. A third was a family physician with an interest in East Asian medicine, and so on. It was discovered, as well, that the research group represented a wide range of experience as patients and as family members of patients. These personal experiences enriched rather than detracted from the discussions.

The size of the research group (18) surpassed the numbers typically recommended for a project team, 12 or less. However, the group effectively gathered around a square of tables in the comfortable library of the university’s Ethics Centre. Although lack of institutional support has been identified as a serious problem for research across disciplines (San Martin-Rodriguez, Beaulieu, D’Amour, & Ferrada-Videlia, 2005), this project’s funding permitted research assistants as well as a half-time coordinator, and the Centre provided a home base.

From the onset, clarity regarding roles and responsibilities was recognized as important, and a contract was developed and signed by all members of the research group. It outlined the use of the data (e.g., storage, project property), the stipulations regarding publications (e.g., must acknowledge the project and its funding; be reviewed by the PIs prior to submission; authorship dependent on contribution), and the commitment and withdrawal of research group members (2-year commitment desired, able to withdraw at any time, must maintain publishing agreement). Level of commitment has been identified as a source of turmoil in multidisciplinary academic groups (Younglove-Webb, Gray, Abdalla, & Thurow, 1999), with sabbaticals, reassignments, and other demands interfering with the ability or desire to continue contributing to a project. Because this was addressed at the outset, this was not a significant issue during this project.

Nissani (1995) has offered four criteria to rank interdisciplinary richness: number of disciplines involved, distance between them, novelty and creativity involved in combining disciplinary elements, and degree of integration. The relational ethics project does well on all four criteria. It is in meeting the last criterion (the degree of integration), however, that the research process moved from being interdisciplinary to being transdisciplinary.

Opening the Dialogue and Keeping It Transcendent

For questions that challenge the status quo to be raised and new insights articulated, a climate of safety, trust, and respect must exist (Brown & Isaacs, 1996), as well as an equality that allows researchers to challenge each other’s thinking (Schunn, Crowley, & Okada, 2002). At the first meeting, the research group explored what each member hoped would and would not happen during the project. The hopes involved being able to make a meaningful contribution; the fears, that one’s voice would be silenced or dismissed. The PIs noted:

Within interdisciplinary work we needed to recognize the issue of power: How does one avoid any one discipline dominating the conversation? How can one remain aware of the potential that one kind of discipline, gender, ability, or scholarship may privilege the questions being asked and answered? (Bergum & Dossetor, 2005, p. 19)

Explicitly acknowledging at the outset the potential for silencing members of the group, for stifling the expression of opposing opinions, or for creating an atmosphere of competition seemed to decrease the likelihood of such outcomes within this research group.

As the researchers coalesced into a team, it became increasingly possible to address the tensions of diversity and differences. The research group began to mirror the team process in health care practice, with all its strengths and stresses, a distinct advantage when the intent is to explore perspectives on ethical practice. The following details one such example.

Early in the project, discussion centered on ethical engagement with patients. It turned to the idea of coming to know the patient as a person. A female nurse began to describe a situation in which she had cared for a comatose child, believing that she was giving her patient the best care she could. One morning when the nurse entered the patient’s room, after being absent for several days, she noticed a drawing left for the patient by her sister. The nurse realized that she did not know that her patient had a sister and thought, “Christine, I don’t even know you.” Her distress as she recalled this was apparent, and several research group members were obviously moved by her story. The male physician sitting next to the nurse said, “Could we get back on topic?” and then promptly identified a theoretical construct for discussion. This moment nearly passed without reflection as others responded to the direction of the physician. Then someone said, “Wait a minute, What just happened here? It feels so familiar.” This single question directed the rest of the discussion.

What had just happened? As sometimes occurs in health care environments, dialogue was shut down when a practitioner’s “feelings” became overt and
Letting Go of the Script

A significant barrier to interdisciplinary or transdisciplinary collaboration is finding the words to express ideas that transcend disciplinary knowledge. Disciplines often ascribe different meanings to the same word, and borrowed concepts can easily be misused (Dogan & Pahre, 1990). Dialogue can be difficult if a shared language does not exist. Unfortunately, a feature of disciplinary-focused education is the isolation of students in their education (Baier, Stubblefield, & Hoechst, 1997). This isolation sustains specialty language and concepts and restrains any motivation to explore literature outside one’s discipline (Barr, 2002). Yet finding a common language, engaging in authentic dialogue, and recognizing our disciplinary “screens” or “lenses” are features through which the interdisciplinary process moves toward the transdisciplinary (Giri, 2002). Some scholars believe that these core features in the movement to transdisciplinarity are essential to resolving inherent problems in the current academic system, including disciplinary isolation, the incongruity between disciplines’ languages and modes of knowing, and the ever-increasing mass of information (Hamberger, 2004). They are also central to bridging the theory–application gap (van Manen, 2001) and to addressing complex social problems whose solutions are beyond the resources of one discipline (Horlick-Jones & Sime, 2004).

In the health sciences, experiences with patients and families provide a common ground. That the research group gathered around a patient’s situation facilitated the discussion. Nevertheless, it was difficult to go beyond habitual ways of thinking, to develop a shared language and attempt to consider ethics in a new way. As one research group member put it, we needed to “let go of the script” or, as Giri (2002) described, have the “courage to abandon” (p. 109). Transdisciplinary work requires overcoming disciplinary chauvinism and becoming open to the perspectives of others (Giri, 2002). This does not mean negating what one knows but does mean becoming free of restraining perspectives (Bergum & Dossetor, 2005). Although this process was not always easy, letting go of the script was a helpful metaphor to which we often referred.

Metaphors can be significant in transcending disciplinary understandings and disclosing what might be otherwise invisible (Evans & Macnaughton, 2004). This includes the sharing of metaphors common to one’s field. One such metaphor explored by the research group was that of care “maps,” a concept popular with hospital administrators. Consideration of mapmaking and factors like spatial and political terrain fostered imaginative reflection on the ethical implications of maps of care.

Another strategy used by the research group for expressing tacit understandings and moving the work forward was the collection of images of ethical relationships in health care (e.g., a photo of a hospital bed
so surrounded by technology that the patient in the bed is not immediately evident; a painting of a sick child, parents, and a physician. The images triggered rich dialogue and were found to support thematic elements arising in the scenarios. Conversation has been identified as the most important work in our contemporary knowledge economy, as it is the means by which knowledge is acknowledged, shared, and discovered (Webber, 1993). It was certainly true that informal talk among the research group played a part in the evolution of the project. These talks might occur in the parking lot after a meeting (despite the risk of frostbitten toes) or (more comfortably) over coffee and cinnamon buns on a break. For the move from interdisciplinary to transdisciplinary—for the success of the project itself—the research group had to let go of the script and engage in authentic dialogue.

**Productivity and Research Results**

The collaboration of interdisciplinary and transdisciplinary research can require a different approach to conducting a project (Després & Brais, 2004). Analysis and writing are creative activities not easily accomplished in a group. As group processes, they require more time than individual work. Outside the research group scenario meetings there were gatherings for interested members to work on specific “products” of the research, such as scriptwriting for the drama. A weekend retreat allowed for further analysis and writing. The time dedicated to this was essential for its success.

The PIs took a strong lead in disseminating research results. All research group members were invited to contribute to articles, scriptwriting, and presentations, but there was no demand to do so. The book about the project was authored by the PIs, with interested research group members critiquing chapter drafts. At the same time, research group members were encouraged to present the work to their own disciplines and at interdisciplinary conferences. At a conference, the research group presented on the relationship between principle-based and relational ethics. The original plan was for a scripted panel. It was recognized, however, that this was not going to work: The research group needed to interact with the audience. The format was changed to one that directly engaged the persons in attendance. Letting go of the script in this way highlighted both the risk taking always involved in such attempts at engagement and our developed commitment to an ongoing dialogue. To this end, the book based on the initial relational ethics project concludes with the acknowledgment that “inviting and enacting continual conversation is our most important task” (Bergum & Dossetor, 2005, p. 221) in the development of relational ethics.

**Conclusion**

Any collaborative research across disciplines—multi, inter, trans—adds value in accessing a broad base of expertise (Schunn et al., 2002). For research focused on health care, such as that exploring ethical practice, a further advantage is that it more closely replicates the real world of health care than do single disciplinary models. Although practice oriented, the relational ethics project neither succumbed to a reductionistic approach to ethics nor adopted a technocratic worldview (van Manen, 2001). Rather, through turning to cases, images, literature, and dialogue via the nontraditional method of interpretive inquiry, an alternative approach to health ethics evolved. Through this process, although unintentionally, the interdisciplinary relational ethics project evolved into a transdisciplinary one. The research did not articulate a new approach to health ethics but proffered an emerging understanding of it, inclusive of yet moving beyond principlism and an ethics of care: The foundational knowledge for ethics lies in understanding our relationships with others. Through conception, assemblage, and process, the project fostered a natural movement of the research group from interdisciplinary to transdisciplinary activities. Although natural, the movement was not always easy. It was difficult, sometimes painful, but inherently worthwhile. Our intention in sharing this case study has been to demonstrate the possibilities and challenges of transdisciplinary research and its reflection of the complex reality of health care itself.

**Notes**

1. Although the process that would change medical ethics into bioethics began in the 1960s, the term was not used until 1972.
2. For a full description of the research method used, please see Chapter 1 in Bergum and Dossetor (2005).

**References**


