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Methodological considerations and experiences in clinical application research design

Albertine Ranheim* and Maria Arman

*Corresponding author: University of Mälardalen, Sweden
Email: Albertine.ranheim@mdh.se

Abstract

Background: Strengthening the relationship between research and clinical practice, and improving the use of research in healthcare are challenging areas that need creative solutions. Clinical application research is a design based on Gadamer's idea that understanding always involves interpretation and application.

Aims and objectives: This study aims to assess from a methodological viewpoint a project in which two researchers cooperated with clinical healthcare workers over three years.

Methods: Interviews with the participating clinicians on a ward for rehabilitative cancer care. Inspired by Gadamerian epistemology, a interpretive analysis was performed on the transcripts of three focus group meetings.

Findings: Taking part in the project demonstrated to the participants the value of systematic and analytical scientific work in the acquisition of new knowledge and wider insights. Participants were inspired to investigate taking theoretical assumptions from caring science into practical clinical work. They described an expanded reflective awareness of caring work in terms of their observational abilities. Everyday challenges were clarified and deeper aspects of caring emerged; tacit knowledge became expressed and verbalised.

Conclusions: The participants developed a scientific approach to their clinical caregiving knowledge, as well as an increased awareness of their profession. If an organisation is interested in improving its results, and its patients' experience of health and wellbeing, this study recommends that it devote time and resources to strengthening the relation between research and clinical practice. Clinical application research is a structure that can help achieve this.

Implications for practice:

- Clinical application research creates the possibility to develop deeper awareness of procedures that are taken for granted
- Clinical experts are given opportunities to develop a scientific approach to practical clinical care
- Researchers in caring sciences are given a response to their theory from its application in practice

Keywords: Theory and practice, application research, hermeneutics, expanding caring awareness

Introduction

A fundamental question in healthcare research is how we can develop approaches that enhance the exchange between research and clinical practice.

The use of poor or inconsistent research in clinical practice is a recurrent theme, presenting a challenge about how best to incorporate research into caregiving practice. The use of research involves a process of learning as well as engaging attitudes, beliefs and behaviours, and this ontological question is fundamental to the practice of clinical care. This is often overlooked in approaches and models that aim to facilitate the use of research in clinical practice, resulting in a gap between theory and its practical application. It is therefore imperative to look for new approaches in transferring research into practice.

Background
Despite gains over the past two decades in the theoretical basis for applying research, methods of integration have not been directly addressed, although the development of evidence based practice is a positive consequence of efforts in this respect. Systematic review updates in Squires et al. (2011) and Estabrooks et al. (2011) show that developing a strong relationship between researchers and practitioners, using evidence based methods, will result in better, more cost effective care delivery to consumers in practice settings. The reviews concur with earlier reviews in finding positive relationships between general research utilisation and beliefs and attitude, and between research and the current role and level of graduate degrees.

Nevertheless, the question remains as to why it is so difficult to implement research if it is considered such a good way of promoting better practice. In her thesis, Kajemo (2007) points to some of the barriers in making use of research and indicates that it is a complex issue. The study shows the vital importance of support from the organisation, as well as how important it is for clinicians to undertake organised reflective work. Matthew-Mike (2010) suggests that, in combination with research utilisation theories, a transformation theory may be the missing link in developing more effective initiatives to transfer research into practice, to implement and sustain change in healthcare. The transformation theory, she suggests, should offer explanations and specific strategies. These involve critical reflection to explore attitudes, beliefs and behaviours so that they are understood and validated, and can better guide actions. Studies by Rycroft-Malone et al. (2004, 2010) pay attention to the complexity of implementation research and the identification of key factors in the implementation of evidence in practice. Such factors include the social, cultural and structural boundaries that must be defined and acknowledged.

Caring science is an autonomous discipline. With an explicit theory base, nurses have a stronger foundation both for their practice and for evaluating its outcomes (Cody, 2003). Studies concerned with the development of concepts, theory and reflection have also been identified as ways of bringing theory and practice closer together (Ekebergh et al., 2007). Extensive research experience in Sweden illustrates that caring theory can energise creative thinking and make communication easier (Ekebergh, 2007; 2009).

Extending research results into clinical practice also has a legislative dimension. The International Council of Nursing (2012) states that, by law, caregivers must develop plans for care and education in their work that are rooted in research and evidence based practice. Consequently, there exists a number of methods or tools to facilitate the implementation of theory or research in clinical nursing and caring practice. In a Scandinavian caring science tradition, Lindholm et al. (2006) developed a design for the integration into clinical practice of caring science theory and the experience of caring. This design is known as clinical application research, and has been applied in various important projects in the Swedish and Finnish health services in recent years (Arman et al., 2008; Rehnsfeldt et al., 2008; Råholm et al., 2010; Lindwall et al., 2012; Karlsson et al., 2013).

The aim of this article is to clarify, evaluate and present the methodological characteristics and experiences of clinical application research. The focus is on knowledge acquisition, reflection and skills development for the individual nurses and healthcare staff in the project, and consideration is given to what the project means for the organisation.

Presentation of methodology/epistemology in clinical application research
How is clinical application research designed?
The design of clinical application research (Lindholm et al., 2006) involves researchers working with clinically active colleagues in a team to research phenomena specific to a clinical context. Principally, clinical application research starts by making explicit the meaning of caring science for practical caring work; in other words, that caring ontology is made visible in caring work. The epistemological and ontological positions of the researchers are clarified when they enter into the clinical context in which the research is carried out. These basic assumptions are formulated around the conceptions the researcher has of, for instance, health, wellbeing and suffering. Consequently, clinical application research involves the opportunity to reveal, clarify and demonstrate clinical evidence and caring science theory in practice. It represents understanding, interpretation and application as problematised by Gadamer (1960) in his philosophy of understanding (see Figure 1).

Figure 1: How theory and practice correlates with application
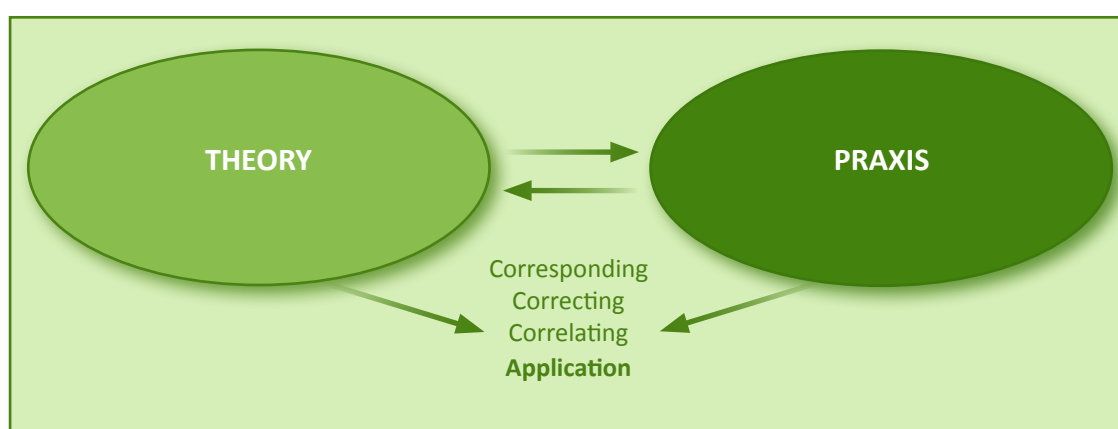
Epistemologically, the approach of this research, and of clinical application research in general, has its foundations in hermeneutic philosophy, based largely on Gadamer (1960). Problematising issues that are taken for granted is fundamental to hermeneutical and phenomenological research. This encourages being attentive to, and reflecting on, the processes of consciousness, such as prejudices and presuppositions. It can be described, as Gadamer (1959) explained, as an eternal movement of the human mind, and represents an intertwining of what is known (pre-understanding) and what is still unknown. Gadamer makes explicit the importance of the unknown, and the challenge of making the unknown known. This means taking the unknown on board, for example in the course of dialogue, and being open to new and different interpretations. As we start to reflect on how we experience phenomena, the issues that arise alongside the phenomena can become available for reflection. This helps us to distance ourselves from our so-called 'natural attitude' (which characterises our lifeworld). Problematising the lifeworld and intentionality are essential in hermeneutic and phenomenological research. Dahlberg (2008, p 130) uses the concept of 'bridling' to mean an open and alert form of waiting for the phenomenon to manifest itself in order to seek meaning.

An assumption is that basic caring concepts and theory may represent a field or area where we are confronted with our inherent preconceptions and prejudices. We may learn something about ourselves and our preconceptions through this confrontation (Ekebergh, 2007, 2009; Austgård, 2012).

Table 1: Overall presentation of the clinical application research project. The highlighted column, Stage 3, shows what is analysed and evaluated in this study			
STAGE 1: 2011	**STAGE 2: 2012**	**STAGE 3: 2011-13**	**STAGE 4: 2013-14**
Study I Ten healthcare staff of various professions Two researchers Reflective meetings every three weeks	Ten healthcare staff of various professions Two researchers Preparation and collective analysis of the data Study I published in January 2013	*Study II* Ten healthcare staff of various professions Two researchers	*Study III* Ten healthcare staff of various professions Two researchers
AIM Descriptions from healthcare staff of the meaning of existential care Cases: n=65 Data collection period: 12 months		*AIM* Evaluation and reflection on the meaning of participating in the CAR project Data: two focus groups with 10 participants Study II written by the two responsible researchers of the project	*AIM* Patient perspective on existential care Data: interviews (n=16) Ongoing study

Chart of the clinical application design project as a whole

A project was carried out between 2011 and 2013 at a clinic in central Sweden. An article from this project was published in the *International Practice Development Journal* in May 2013 (Arman et al., 2013). The project involved two scientifically educated researchers, who collaborated with 10 clinically active colleagues, including therapists, doctors and nurses, to form a research team (see Table 1 above). The team working on the project consisted of regular staff on a cancer rehabilitation ward with 12 beds. In this anthroposophic clinic, conventional rehabilitation and medical care are integrated with anthroposophic care and treatments. Anthroposophic medicine and care is a complementary initiative, whose aim is to create a holistic healthcare convention. The majority of working healthcare personnel have specialised in the area of anthroposophic medicine in addition to a conventional medical education (Arman et al., 2011). Today, at least 25 hospitals in Europe specialise in this form of medicine. Anthroposophic medicine rests on three pillars: nursing care, therapeutic treatment and medical treatment (Therkleson, 2005; Arman et al., 2008). The project team maintained dialogues on research questions, aims, methods, procedures and data, as well as analysis of data, interpretation and applicability of the findings. In the first stage of the project, all team members collaborated on the detailed plan for data collection and analysis. Project meetings were held on the wards every three weeks. At the same time, the team members carried out individual tasks and theoretical reading.

In stage 1, the research questions were formulated by the research team during the dialogue that took place in the first six months of the study. The researchers' point of departure was that the team would study phenomena related to a clinical view of existential healthcare. The questions that emerged were:

- What does existential care mean to the caregiver?
- What is existential care in everyday life in caring for patients with cancer?
- What can be done so that caregivers feel more secure in practising existential care?
- What knowledge facilitates and promotes existential care?
- What opportunities, challenges and obstacles confront existential care in everyday clinical life?

An overall aim of the whole project was to strengthen and develop the collaboration between research and clinical practice. Another aim was to explore healthcare empirically, ensuring that patients and clinical caregivers participated fully in the creative caring processes (not to be confused with the aim of this study, which is to clarify, evaluate and present the methodological characteristics of clinical application research design).

Data collection in the first phase of the project consisted of short, illustrative, incident-type narratives from the staff, and patient cases that inspired broad reflections at the project meetings. These accounts of 'meaningful care situations', involving 65 cases, were recorded on paper by all personnel for five months. Finally, the full working group discussed the postulations in order to verify, understand, develop or reject them. Study I was written and published at stage 2.

A further study is in progress that aims to exploring the meaning of existential caregiving from a patient perspective (see Table 1).

Ethical considerations
In this project, ethical rules and principles for research were communicated to all clinical project participants. The research ethics were discussed by the entire group and everyone participated in the application for ethical approval. The application was approved by the regional ethics committee (2011/444-31/4) and patients were informed about the project via the ward's noticeboard. The personnel who wrote about their cases took care to describe situations in a dignified manner and to provide no personal data, hospital names or other details that could constitute a breach of patient confidentiality.

Purpose and aim (of current study)
Reflections from the lived experience of participating in this research project are analysed and evaluated in this paper. The project design is based on theories in caring science that originate from the Nordic caring science tradition (Lindholm et al., 2006).

The aim of this article is to clarify, evaluate and present the methodological characteristics of clinical application research (in a cancer rehabilitation ward at an anthroposophic hospital in Sweden). The focus is on knowledge acquisition, reflection and skills development for the individual nurses and healthcare staff in the project, and consideration is given to what the project means for the organisation.

Data for analysis in the evaluation of the clinical application research design
Focus group interviews were held with the participating clinicians, and the clinicians also wrote spontaneous descriptive reflections as notes/case studies during the project. Transcriptions from the two focus groups, held halfway through the project (after 18 months) and at the end of the project (after three years), constituted the basic data for analysis, together with participants' notes written down over the project period.

The participants consisted of therapists, nurses and a physician, all working on the ward. During the three years of the project, some members left and returned, but a core group of six to eight participants remained. This fluctuation and variation contributed to the project, and was not a drawback.

The participants were asked the following questions:
- What has it meant to you as a healthcare professional to work on the project?
- What has it meant to your understanding of the relationship between theory and practice – caring science and caring practice?
- What does the project mean for the hospital?

Analysis

The analysis of data was conducted using a methodological approach for interpretation of texts based on the work of Gadamer (1960). The term 'methodology' includes the philosophical perspective, the assumptions underpinning the research and the record of the way in which the study was conducted. According to Gadamer, interpretation is the act of understanding, and the text is made to speak to the interpreter as she writes down her understanding. A fusion of understanding, interpretation and application forms the interpreter's understanding. The hermeneutic process moves back and forth in a dialectic movement of the text, and is guided by the questions and answers that emerge from it. The search for meaning always involves thematic threads or patterns in the text, which form assumptions or themes, building a new understanding of the whole from the parts. A first reading of the text was made to gain an overall understanding. Then, the text was read open-mindedly several times, which gave rise to patterns of meaning. The next phase was a structural analysis to identify and formulate themes that emerged from the text. This was done by dividing the text into 'meaning units' that were condensed, and then again compared and abstracted to create sub-themes and themes as presented below (Table 2). The themes were mirrored against the first understanding of the texts to validate them (Lindseth and Norberg, 2004).

Table 2: Themes	
Main themes	**Sub-themes**
Knowledge acquisition	• Expanded insights • Sharpening the tools
Interprofessional teamwork	• Intertwining theory and practice • Organisational benefits/restraints

The meaning of the themes and sub-themes is presented below, supported by quotations from the meaning units derived from the structural analysis.

Findings

Knowledge acquisition

The participants at first expressed surprise at being involved in reflection on theory and practice. The discussions generated new perspectives, and the dialogues, concepts and substantial themes that emerged were described by the participants as having an invigorating effect. The research theories they were presented with and brought into play were in accordance with the aim and purpose of the project, and were therefore in line with existential matters involved in taking care of patients undergoing rehabilitation after cancer. They included fundamental and existential questions on health and wellbeing, on life and death, and on meanings of existence and presence in caring.

Expanded insights

The participants raised questions about applying awareness and clarity in caring situations. They mentioned the fact that pragmatic knowledge in caring work could easily be taken for granted and transformed into routines that no longer reflected the greater context. The need for continuous reflection was obvious to all the participants, and it was described as easily forgotten in daily care and routines. The discussions at project meetings encouraged reflection on prevailing assumptions and theories, as well as the lived experiences of the caring situations. Immediate, spontaneous or taken

for granted understanding of caring situations became visible and problematised. They expressed the need for constant formulation and clarification of experiences in caregiving situations, but at the same time questions arose about how reflection could bring something new and innovative to clinical work. The project process moved in stages. It began with periods of engagement, which were exciting, and moved into more reflective periods, which were considered more demanding in terms of consolidating theories and intellectual processes. In daily clinical work the participants usually had their ways of thinking and feeling, and they had routines. Sharing their colleagues' narratives and reflections on their experiences in caring situations, and at the same time relating this to caring science theory, created new and expanded insights into how they thought and acted. This was considered to contribute to clinical work, and was expressed as follows:

> 'These rather short meetings we had every third week seemed to introduce great context and meaning – creating depth and coherence...' (Nurse 3*).

*The 10 participants were given a number sequentially, irrespective of profession.

Contributing to the project meant the participants got an opportunity to deepen both theoretical and practical knowledge in their areas of work. They expressed this enthusiastically, as a desire and a need, and said they became inspired by the structure of the project. They liked the fact that their lived experiences from clinical practice were taken into account and discussed, and that these related to current research.

> '...so reflections become clear in everyday work... I'm making observations I can relate to from the discussions we have in the project meetings, and the texts we've worked with make it possible to deepen my knowledge of caring – in the caring situations – and I wish we could work even more with this... as it's something I would like to do, and need to do' (Nurse 6).

The participants' descriptions of significant encounters in healthcare situations provided data for analysis, and these case studies (vignettes) became the basis for joint reflection before being analysed. When participants spoke about their reflections, one question led to another. New aspects became apparent, and the activity generated more questions than answers. This was considered positive:

> 'One question generates a new one – never ends – the project work is an incentive... it awakens me, and so far this has lasted over time...' (Nurse 8).

Analysing and reflecting on everyday challenges in clinical work was described as beneficial in the sense that tacit knowledge was expressed and verbalised. The way they understood caring, health, wellbeing, life and death was given a perspective. It was considered inspiring and instructive to take part in discussions on philosophical and epistemological issues. The role of theory and concepts in caring science was discussed in relation to clinical experiences, and its relevance was evaluated. One therapist expressed it like this:

> '...the deep philosophical and theoretical discussions have strengthened my own observational, perceptive and listening abilities in therapeutic work...' (Therapist 1).

Theory and assumptions encouraged the participants to go deeper into discussions on the meaning of caring. For example, they discussed at length caregivers' own aims in caring, and how they went about it. They were inspired to investigate the theoretical assumptions and hypotheses involved in practical clinical work. At the same time, any clinical procedures, routines and processes they had already adopted were challenged with new and profound questions.

Sharpening the tools

A recurring central phenomenon from the analysis was the challenge facing the participants in becoming reflective, and holding back their preconceptions when they were working with patients or in discussions in the reflection groups. They considered it challenging to have to hold themselves back and be open and responsive, bridling their thoughts and feelings. However, they also considered it necessary, and thought that it could make caring situations 'completely different'. It would lead to new knowledge of the caring situation, such as observing things they had been unaware of before. A nurse reflected:

'...I think that my instrument has become more stringent, and I've noticed that training is what I need, and I have thought, "Oh, sometimes I could have been even more engaged", and "sometimes I wasn't there", so I find myself more attentive, and I reflect on my own work so that I see things more vividly and awaken my senses more...' (Nurse 3).

The participants described reflective work as broadening their observational abilities, and a common response was that it made them more alert and observant. They moved between the open research field of clinical work, where they had the opportunity to develop their presence more consciously, and dialogues where they could verbalise and reflect on their understanding. An art therapist said:

'I'm much more conscious of the importance of presence and clarity for grasping the patients' situations and how they express them – this is a rather demanding effort – because I have to try to open the situation up but this work helps to "stand in the open" and bring out what I feel... this work can make me wiser in care situations' (Therapist 5).

This awareness demanded attention and training, as it was easy simply to make associations and drift off into some demanding thought or routine that came up. This activity did not take place by itself. It demanded attentiveness and concentration, but was considered essential for assimilating new knowledge.

'...I've found that holding back a little in the encounters is rather interesting... and if it works, it brings out new and interesting things... I'm not very good at it yet, but I'm learning. The thoughts have a tendency to drift off by themselves, and kill the new concepts that emerge...' (Physician 2).

Participants reflected on their responsibility to develop as practitioners in their own profession, and the project work was seen as a way of deepening and cultivating their professional approach.

Interprofessional teamwork

Participation in the project was on a voluntary basis, meaning that everyone who worked on the ward had the opportunity to take part, whatever their profession. Participants felt they were making an important contribution to the ongoing research work, and the project had a pronounced consolidating effect in the group and on the ward. Some participated more often than others, but all those involved were affected by the ongoing work. Over time, a shift in attitude was noticeable as any initial scepticism towards research work changed. An example is given in the following statement from a nurse:

'I must say I was rather sceptical in the beginning. I thought, "Well, here they come to research us – they'll be coming with some abstract theory or academic concepts, and we're doing the practical work... hmm ... I must say this..." but then I realised there was a strong connection between theory and clinical practice, and I very much appreciate that it was a start, and then we were free to formulate common research questions to work with... I liked this very much. So it's way beyond my expectations – I've always been sceptical of research. I was prejudiced about the fact that it was entirely theoretical and abstract – and here I am as a practitioner – but now I'm not sure about this any more...' (Nurse 6).

A recurrent statement was that the project brought the team together, as different professions were included in the work, and perspectives from different positions could contribute to an overall understanding. Bringing in a theoretical foundation benefited the project and contributed to new and challenging perspectives.

> '*The joint work kind of welded us together as a team – we are now listening more carefully to each other*' (Therapist 5).

The reflective work was described as having an impact on changes in attitude and approach towards the patients. Greater awareness and the importance of clarity and 'presence in the moment' in caring situations became central aspects in the participants' clinical caring work. They also became more aware when there was a lack of presence and openness. The collaborative activity was expressed as 'living work' that 'fertilised' the common work on the ward. The team listened more carefully to each other and became more attuned to each other.

Prioritising the project work was perceived as a challenge in terms of time, and giving priority to the project meetings would take time away from other important work. However, participants noted that when they took the time and joined in the project meetings, they considered it worthwhile every time. (It should be noted that no time was taken away from caring for patients; it was taken from administrative and organisational tasks.)

Intertwining theory and practice
The research theory was said to give direction to the mind, and was even considered a tool for broadening the participants' professional aims and motives. Moving between clinical work and theoretical reflection contributed to expanding and enhancing professional work. The method/ approach was described as suitable for ward work, as it included theoretical, practical and educational aspects of the professions. Applying the research meant working through several stages in a process: defining questions for research; gathering data; analysing data and reflections; and writing and publishing. Taking part in the research process and working with the actual questions over a period of time, through all the stages, gave more substance to the participants' work.

The participants' previous image of research had been that it involved someone coming in from outside and observing with objective eyes, or bringing forms and questionnaires to fill in. From the start, though, the questions, issues and procedures involved in the project were drawn up in collaboration with the participants. This meant the research questions were based on tasks or issues relevant to work on the ward. As such, the 'method' was described as a developmental project adapted to internal questions on the ward. For example:

> '*I feel that I can come forward with what's important in the experiences from my work – this kind of research makes space for this. My experience has been that this process has brought substance throughout its various phases… it feels like it has also meant quite a lot for the group as a whole. There's been a kind of lift on the ward, and a lift for caring work as a whole… and it's very important that nursing and caring have the opportunity for this lift… and that what we do here now may be a small drop in a big ocean… but still…*' (Nurse 8).

The researchers and clinical participants were team workers. Smaller events were described as parts of a greater whole, and the specific caring situations constituted broader perspectives on life and death, health, suffering and wellbeing.

According to the participants, taking specific examples from everyday clinical care as their point of departure, and linking them to theory and research to shed light on existential questions in caring, gave caring situations deeper meaning and context. The project meetings were described as being open-

minded, and equivalent to training in how to understand and verbalise the patients' lived experiences of their treatment. Initial difficulties were gradually transformed into an ability to verbalise previously tacit knowledge of caring.

> *'Before I was more uncertain of the patients' unspoken needs – and now, being given the possibilities to reflect and verbalise the experiences together, has given me broader perspective' (Nurse 8).*

The participants considered the method/approach to be directly transferable to practice, and they immediately used the new perspectives in their everyday work. They acquired an ability to be more attentive and observant in caring situations and this became the subject of reflection, which they analysed in the group discussions. Their experiences themselves did not bring new knowledge or understanding; it was when these experiences were elaborated on within the group framework that new insights emerged. The participants considered their experiences to have an important role in the project work. Verbalising and communicating clinical experiences in the context of caring science theory helped them to clarify their aims in caring.

Organisational benefits and restraints

Only one out of the four wards at the hospital took part in this project. Throughout the project period, the participants shared their experiences intermittently with their colleagues on the other wards, and they gave regular feedback at inter-ward meetings. In a previous project at the same clinic, the project group consisted of staff from a number of different wards, whereas in this project the staff of one ward became participants. Expressions of engagement in some way in what was going on came forth, though not all staff actively participated in the discussion meetings held on the ward, as some had to keep the work of the ward running. One physician and one nurse remained for two-thirds of the project, and then dropped out, and one nurse joined the work after six months.

The participants expressed a new interest in personal and professional development. Mirroring each others' experiences gave them an ability to cultivate insights into how effectively they worked with patients and colleagues. There was a greater team spirit, which would become apparent in their work with patients. Discussing their reflections at project meetings opened up new ways of relating to patients and managing their treatment. For example:

> *'…and then there are new ways of relating which I did not think of myself… the others helped me to discover new things…' (Therapist 1).*

Participants considered that their team spirit was stronger. They said the project work brought with it an inspiring atmosphere, created a more professional team and expanded teamwork. They expressed the need for a structure to keep this work alive, as reflections are perishable and have to be encouraged. The physician declared:

> *'…we're certainly listening more carefully to each other now… and the teamwork kind of welded us together' (Physician 2).*

The fact that the two researchers came from 'outside' was considered to have contributed to the project work in the sense that they were professionally neutral, and did not belong to the staff. They initiated and encouraged questions that could lead to wider discussion. An important comment made by the participants was the relevance of contributing to, and experiencing, the way knowledge is acquired through systematic and analytical scientific work. Everyday challenges were clarified and more profound aspects of caring emerged through this process.

They felt as if 'the soul of the ward became apparent and was clarified' (Nurse 3) through the work – both for the actual participants in the project and for the other staff at the clinic. There were queries

about whether a similar project could take place on the other wards as well. The management also communicated its appreciation of the initiative.

Discussion
Interaction of theory and practice – pre-understanding, interpretation and application
In the clinical application research approach, research material is brought into play in clinical practice; theories are put on trial in a clinical investigation and reflected on in discussions between theorists (researchers) and clinical practitioners. Empirical studies show that the relationship of healthcare staff with theoretical caring knowledge is ambiguous; theory can confirm practice, but theory can be too narrow to have practical relevance, depending on the understanding of the theory in question and its relevance to the context (Ekebergh, 2009; Ranheim and Dahlberg, 2012). The innovative design of clinical application research allows participants in the projects to create and develop their own approaches to the work, linking appropriate theoretical substance to the specific forms of caring and treatment taking place on the wards.

In the context of this study, it became evident that a central point of departure was reflection on fundamental questions of caregiving from the point of view of caring science. Participants could argue for or against their tacit knowledge, which was activated by the practical experience they had developed over time. They could shed light on their experience and give it perspective, as is shown also in the extensive research of Ekebergh (2007; 2009). The reflective atmosphere in the project meetings was important for generating a new and broader understanding. The participants expressed expanded understanding of fundamental caring scientific questions, on ethical, epistemological and methodological levels. Accordingly, the research design goes beyond classic action research, as the participants are confronted with and trained in scientific approaches, as when contributing to the analytic work, as well as in the philosophical ideas and structures behind the approach. This may be considered as development work, both in scientific theoretical substance and in clinical practice.

It is important to note the relevance of cultivating practical knowledge, which is equally important as a basis for good caring. Practical knowledge is acquired through the perceptiveness of individuals and cannot be taught or explained in terms of general rules, manuals or models. This knowledge is often relational and contextual, linked to aesthetic ability, and it manifests itself in the ability to make good decisions. It usually develops over years, but not automatically. It must be cultivated and requires training. This knowledge can never be measured because it is situational and relational; it is a type of knowledge linked to personalities and a person's values (Bornemark, 2009). The results of this project show that combining caring science theory and practical clinical knowledge leads to progress in the understanding of caring. It is neither a refined theoretical and scientific approach or model, nor an unsystematic approach. It is the interaction of the two, which offers the possibility of cultivating a caring consciousness.

As the participants worked together in the team and reflected on their experiences, an increased consciousness of their profession emerged. In the course of this development they were better able to see how they approached the care of their patients and how they interacted with their colleagues. In this way, the interaction of the clinical caring context and the participants' reflection created an ongoing dynamic that challenged both their clinical understanding and their grasp of the scientific-philosophical element.

From this perspective, clinical knowledge, both tacit and pronounced, may benefit from an interchange with caring theory. Ranheim (2011) concludes that mediating care is the visualised outcome or evidence of the intertwining of theory and practice in caring. Mediating care has to do with how caring is brought about in doing, being and becoming, and it is given expression through insights into each other and the ways we connect to each other. Mediating care can merge gradually into intermediate processes; it is a phenomenological, hermeneutic process of cultivating and being cultivated in caring.

An existing challenge is that, in Sweden as well as in many other countries, nursing and caring science exist in a healthcare context dominated by the economics of curing and caring through diagnoses and measurable symptoms. There is a belief today that by integrating general quality assurance programmes based on statistics and protocols, the quality of caring will improve and healthcare will be more economically sound (Ranheim and Dahlberg, 2012). The researchers of this study believe the opposite is likely: by implementing standardised programs, individual discernment is lost, along with the possibilities for developing an expanded caring awareness. As a result, the cultivation of clinical sensitivity and the humanity of caring are greatly diminished. The clinical application research design offers opportunities to get an immediate response from implemented theories, methods and programmes through the participants' clinical expertise and reflection; that is represented both through the patients and the caregivers as participants in clinical application research projects. Consequently, frameworks and models in caring and nursing that are more limiting than lifting can expeditiously be eliminated.

Clinical application research – methodological benefits and restraints
Lindholm et al. (2006) anchor clinical application research in epistemology according to the way Gadamer (1959; 1960) developed his philosophy of the nature of understanding. Application, Gadamer says, always involves revision and changes in understanding/perspective. Understanding is connected to action and intention.

A premise for being able to attain any new understandings of phenomena is the effort and need of being able to be open to them. In a Gadamerian (1960) metaphor, this is called excursion and return – grafting the unknown or making the unknown known, for example where dialogue is open to other interpretations. The results of this study indicate that recurring reflective dialogues, in combination with describing significant caring encounters in clinical practice, provide the opportunity for participants to become more open to, get insights into, and learn to bridle their own pre-understandings (Dahlberg et al., 2008), as well as acquire broader perspectives on the meaning of caring.

Clinical application research is first and foremost a structure for a dialogue based arena, where theory meets clinical practice, and where some kind of new knowledge is gathered. However, it should be considered a genuinely adaptable and fruitful form of development in healthcare, as research is integrated into clinical practice in healthcare units and the staff participate in the development process. There are perhaps more didactic benefits than scientific ones in the design, as it reduces the distance between daily clinical practice and abstract research phenomena. Where research is directly transferred to clinical practice and tested in the field, staff will become more competent and engaged (Arman et al., 2008; Lindwall et al., 2010). These findings come in the context of rehabilitative cancer care in a small hospital but could be transferable to other contexts, as the dynamic and reflective processes of understanding are a universal concern.

Organisational challenges
Some organisational matters need to be raised as a result of the project. Sustaining this type of work will require a structure. In a clinical application research project, participants are invited to take part in work involving vital, living questions, rather than simply testing a hypothesis. Something is actually brought into play on the ward, and frameworks are developed for the process, but the outcome is open-ended. This is the character of a phenomenological, hermeneutical methodology – not knowing what the actual knowledge is before bringing it into play. In a design like this, it is of considerable importance to base the descriptions of the research phenomena on openness, clarity and ambiguity.

Another issue is that the healthcare staff cannot be expected to maintain the work on reflection by themselves, nor can it be based on any manual or method. Perspectives involving reflection and insight are living entities and are therefore perishable. In other words, in collaboration with others, time should be organised for this type of reflection, for the development of the caring work itself,

and for self-reflection. Severinsson (2012) is searching in her work for the missing link of research utilisation in caring and nursing practice, and suggests that implementation should involve the transferring of knowledge from the scientific community to practitioners. However, she claims this will require supervision, which may not be available. According to this study's findings, clinical application research is a design that may be the missing link in transferring scientific research directly into practice. Figure 2 shows the dimensions of clinical application research. Theoretical and practical reflection, and developing awareness in clinical practice are intertwined and may lead to expansion of a caring consciousness.

Figure 2: The dimensions of clinical application research
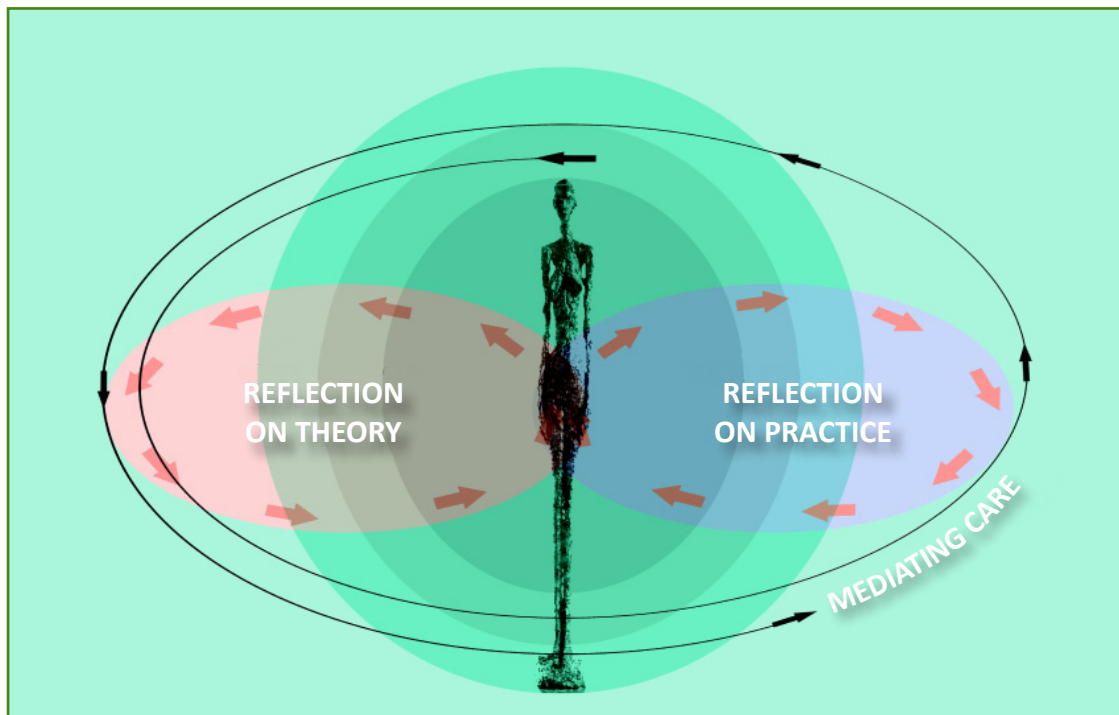
Recommendations for practice and further research
Another interesting question arises from this project: how did the patients experience the work? This remains to be evaluated but is now in the data gathering phase, and interviews are being conducted. This study asserts that time and resources allocated to strengthening the relationship between research and clinical practice are likely to result in a win-win situation for patients, healthcare staff and the wider organisation.

By using contextual, case-oriented ways of finding the unique and relational between carer and cared for – involving hermeneutic and phenomenological reflection on the situations – caring science theories emerge as an area worthy of testing in the field.

Limitations of the study
In the context of the present study, questions concerning data gathering should be problematised. To ensure that the phenomena acquire deeper meaning than they did in the focus groups and in the notes, follow-up interviews with individual participants could provide additional examples of how theory and practice could meet.

Conclusion
The participants developed a scientific approach to obtaining their clinical caregiving knowledge, and increased awareness of their profession emerged from their participation in the working team and

through the reflective work. If an organisation is interested in improving its results and developing its patients' experience of health and wellbeing, this study recommends that it devote time and resources to strengthening the association between caring science research and clinical practice. Clinical application research is a structure that can support an attempt to achieve this.

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Albertine Ranheim (PhD, RN), Senior Lecturer, School of Health, Care and Social Wellfare, University of Mälardalen, Eskilstuna, Sweden.

Maria Arman (PhD, RN), Associate Professor, Integrative Care Science Center, Järna, and Department of Neurobiology Care Science and Society, Karolinska Institute, Stockholm, Sweden.

A commentary by Angie Titchen follows on the next page.

COMMENTARY

Methodological considerations and experiences in clinical application research design

Yes and… ! Now for the research path even less travelled?

Angie Titchen

I was really delighted to see researchers Albertine Ranheim and Maria Arman taking a path that researchers do not usually take. With tremendous commitment, Albertine and Maria have worked alongside a ward team for three years, in a hospital that works with anthroposophical principles. Every three weeks, for the purpose of testing out caring science theory, they created a reflective space in which they posed questions to help eight to 10 team members to reflect deeply in and on their own caring practice. Based on values that many developers would recognise – collaboration, inclusion and participation (CIP) – they helped team members to reflect by enquiring into their own practice using a

clinical application research design. This design is congruent with the hermeneutic phenomenological underpinning of caring science. Not only does this congruence add to the rigour of their particular clinical application design, the aesthetic balance also pleases me. In my commentary on this well-written and useful paper, I take a painterly, broad brush or impressionistic approach to locate clinical application research in the wider field of getting research/theory into practice by looking at this field as a network of paths. Then I compare their methodology with practice development that is located in critical social science by considering issues around praxis, values, context and facilitation. Through the comparison, with light brush strokes, I offer a critique in relation to:

- Albertine and Maria's role and intentions as facilitators
- Reflexivity
- Congruence between the methodological design and research methods
- Extending the work to the wider organisation

Finally, I offer some critical questions for readers.

In the 1970s, it was assumed by researchers and educators (who wanted to help healthcare professions become more theory and research based) that it was the way research findings were communicated that was stopping practitioners from using research findings and theory in their practice. As they sought to convey findings in more helpful ways, it is probable that many educators and researchers took a narrow, linear path to improving practice because they used the didactic approaches of theory first, then practice, as well as telling and explaining. At that time, these approaches were prevalent in education rather than the idea of enabling people to understand research experientially in the midst of practice. I can vouch for this because I was a newly qualified physiotherapist on the receiving end! Rather than helping learners to develop skills for learning and discovering things for themselves, we

were considered to be 'empty vessels' to be filled with knowledge that we would, somehow, be able to use later in practice. Anyway, if we take nursing (which was then perhaps the healthcare profession most active in trying to improve research uptake), early research showed that merely relying on the narrow, uncomplicated path of improved communication was too simplistic (Hunt, 1981). Hunt recognised that research and practice were interdependent and that they needed to be developed together. Consequently, the role of researcher as teacher (Wilson-Barnett et al., 1990) came into being.

As in the work of Wilson-Barnett and colleagues, some educators had success in helping practitioners to take the initial steps of a research endeavour. They enabled them to choose a topic that was relevant to their practice and then conduct a literature search and critical review. From this review, they helped practitioners to determine which findings they would use in their practice and then provided them with support and specific educational programmes to improve care and subsequently to evaluate the effects. However, there is no evidence that such support roles became embedded in healthcare organisations and so it is likely that these initiatives fell away when the researchers as teachers left. In hindsight, it is probable that most educators, healthcare executives, leaders and managers seriously underestimated not only the work that practitioners have to do to interpret, particularise and use theory and research findings in their own practice (Eraut, 1994), but also the need for systematic organisational approaches (Hunt, 1987) and supportive cultural conditions. And while welcome, the shift of focus in the 1990s from the personal to the organisational (MacGuire, 1990), seemed to lose sight of the support practitioners still needed to develop these sophisticated skills.

And so, in the later 1990s and early 2000s, the linear path became wider and more heavily trodden as evidence based practice became more prominent and researchers introduced, for example, linear quality improvement systems and processes, and clinical guidelines and systematic reviews to support practitioners. But they still tended to ignore situational complexity and the need for skilled facilitation of practitioners' capacity to interpret research and judge its appropriateness for particular patients and families. As practitioners continued not to put research into practice, researchers in the emerging fields of practice development and quality improvement in nursing began to explore, in the reality of practice, why this might be. They came to the conclusion that not enough attention was being paid to the complex interplay between the nature of evidence, the context (including culture, leadership and evaluation) and facilitation (Kitson et al., 1998). There was a need to step off the linear path and plunge into the undergrowth and unknown.

These pioneer researchers as practice developers were interested in the development of patient- or person-centred nursing and started to explore how to create contexts and facilitation conducive to enabling practitioners to develop themselves epistemologically (that is, to acquire and develop their different kinds of knowledge and ways of knowledge) and ontologically (to nurture their being as a person and practitioner) in and from their own practice. This path was uneven, full of holes, brambles, twists and turns, but slowly through careful testing, clarity emerged about how to create conditions conducive not only to using theory/research in practice, but also to letting effective facilitation develop and flourish in the organisation. At the same time, within the emerging fields of knowledge translation and implementation science, researchers were also paying more attention to these factors and more progress was being made.

Another winding path leading off from that of the researcher as practice developer was the researcher as facilitator who helped practitioners to become practitioner researchers. It is on this path that I begin to see some similarities with clinical application research and some differences. Researchers as facilitators usually were or had been clinicians who also had highly developed educational, facilitation, leadership, research, theoretical and practice development skills. They acted as role models in terms of blending their practice epistemology and ontology, and had expertise in creating, with practitioners, conducive organisational and workplace conditions and workbased learning as inquiry opportunities. In several action research studies, using the workbased learning strategies of action learning and critical

companionship, research teams successfully helped experienced practitioners to develop inquiry skills through the experience of researching their own everyday work practice/expertise and theorising it using a variety of caring theories (for example, Hardy et al., 2009).

At this time, researchers as facilitators became more aware of the need to help practitioner researchers to develop their professional artistry, including acquiring or fine-tuning multiple ways of knowing – precognitive, cognitive, metacognitive (thinking about thinking) and reflexive knowing – as well as melding and blending theoretical, practical, personal and local knowledges. This can be called 'artistry' because it is a complex blend that occurs rapidly in the midst of 'hot action', with patients and colleagues who are unique and coming from different places, contexts and situations, and have particular desires, dreams, aspirations, needs and experiences. This blending, along with other dimensions, such as multiple intelligences and discourses, and processes such as flow, working with energy and balance (Titchen, 2009), enable practitioners to act and make decisions that effectively help the individual. Although Albertine and Maria don't use the term professional artistry, they certainly paid attention to helping the ward team with the melding and blending of knowledges and they were aware of the need to nurture aesthetic ability in this activity. As we see in participants' self-reports, there is some evidence that they were effective.

Reflection is another point of contact between clinical application research and practice development and facilitation paths. Reflection is central to two kinds of praxis (mindful doing) – emancipatory and hermeneutic. At the heart of practice development rooted in critical social science is the idea of emancipatory praxis, that is, mindful doing with the moral intent of social justice. Praxis within critical creativity (a new worldview for transformational practice development that is also located within critical social science) also has the moral intent of human flourishing for all involved. Emancipatory praxis is concerned with taking mindful action to bring about the three Es of Enlightenment, Empowerment and Emancipation (Fay, 1987), so we free ourselves from the challenges that prevent us, in this case, from melding and blending research findings and theory with practical knowhow in our work with patients, families and colleagues. Hermeneutic praxis, on the other hand, is about taking mindful action to enable the surfacing of our embodied, tacit knowing and understanding of the hidden meaning of things. Through hermeneutic praxis, cognitive insights and understanding can be gained through dialogue with emergent knowing and the yet to be known. Both forms of praxis are facilitated by professional artistry.

It is hermeneutic praxis that I can sense as the intent of Albertine and Maria's facilitation. They do not name it or show us practically or theoretically how they did it. They do not tell us if they were trying to access participants' emergent meanings and understandings about their experience of clinical application methodology, as they were trying to do in relation to their understanding of caring science within their caring practices. Maybe they did and just took it for granted and therefore thought it not worth mentioning. In this respect, I note that the participants do not talk about actually doing inquiry or about the processes they used or developed as they made sense of caring science theory in their own practice. Rather, we are presented with evidence that tends to show that they thought the process raised their consciousness of what they were already doing in caring for patients and made them more effective, for example, in being present with patients.

Albertine and Maria are right I think. Their focus group interview approach (a self-report approach that captures what people espouse they do and not necessarily what they actually do) seems to have missed capturing the depth of knowing and skill, in terms of doing inquiry, that I would expect to have been acquired given the support they provided. I found it odd that they relied only on one method and that that was a purely cognitive one to gather data about team members' experiences of a methodological design that pays particular attention to precognitive or embodied insight and understanding. Also, where they suggested that more in depth, one to one interviews would have been better, I missed a discussion about how they could, in future, access the more embodied, taken for granted, tacit stuff

about participants' experience of the study design. In my view, using multiple methods is essential here and those of practice development might be of interest to clinical application researchers in the future. These include observations and then questions about what they were doing, thinking and feeling, creative expressions, staff and patient storytelling and critical-creative dialogue, as well as qualitative 360 degree feedback from all stakeholders. Albertine and Maria say the next part of their research will include feedback from patients, but I again I wonder whether relying on interviews will be sufficient. Perhaps, too, more use could have been made of the participants' case studies, the reflective learning spaces and other data the participants had collected, such as personal reflections.

Another interesting confluence of clinical application research and practice development is the explicit valuing of what we call CIP in practice development. In this study, team members were invited to be participants in what I would call a co-inquiry process. This invitation was a shock for one participant, who presumably had never experienced researchers valuing clinical practice before. Participants collaborated, were included and participated in every aspect of the research (except the writing of this paper?). As in workbased learning as inquiry in practice development, this strategy seems to have been key to overcoming often-espoused practitioner resistance to using theory in practice. However, unlike practice development, other key stakeholders, for example, patients, families, managers, clinical leaders and the executive team do not appear to have been included as co-inquirers or stakeholders.

Which leads me to the climax of my commentary.

There is one sentence that stands out for me, above all others, which shows where clinical application research and practice development paths seem to diverge. This is the seemingly throwaway line that no one in the other three wards joined the project group. This raised a whole load of questions for me. Given that the hospital and the managers seemed to be supportive of the work and it is reported that they valued it, why might this have been the case? Were the necessary contextual conditions only present in this one ward? And if so, what were they? That would be useful to know. In practice development, we would expect to see, for example:

- A shared vision and purpose
- A visible, person-centred workplace culture of effectiveness
- Structures and processes in place to enable all stakeholders in the organisation and community to be involved
- Leaders and managers offering high challenge/high support
- Systems and processes in place to enable workbased learning and inquiry
- Feedback on performance of practice changes informed by, and interacting with, theory
- Everyone developing facilitation skills to support each other's learning and questioning of practice

It would also be useful to know if it was necessary for Albertine and Maria to do anything to get the right conditions in place on this ward and if so, what they did. In relation to the lack of inclusion, collaboration or participation from the rest of the hospital, we know that the ward team shared their findings and experiences with colleagues, but we don't know if anything else was done to involve the whole hospital and if it was, why it was unsuccessful. We do not know if they helped key stakeholders to create the hospital context (culture, leadership, evaluation) and facilitation roles and strategies to support the blending and melding of caring science theory with the practical knowhow of caring? I suppose my questions spring from my unease that the time and resources committed over three years may not have been offering value for money (did I say that?). At the very least, with this kind of commitment and expertise, I would have expected to see some team members being helped to develop facilitation skills to enable wider involvement in the hospital. And it would not necessarily be caring science theory that other practitioners might choose to work with in the future, but any other kind of theory they considered relevant to their development and practice.

These points about the divergence of clinical application research and practice development link to my surprise that Albertine and Maria are almost invisible in this report. While I would expect that their reflexivity – that is, their self-awareness of their impact in relationship with practitioners in the evaluation of clinical application research design – is well developed, they do not report on it here.

Nevertheless, I think this paper has made visible a research design that will resonate with practice developers who engage in research with practitioners, using CIP principles, to promote the interdependency of practice and theory. It also has the potential to highlight the importance of enabling the complex processes of melding and blending practice with theory, but falls short of setting out the embodied, precognitive processes. As I look back along the research/theory into practice paths travelled thus far, this methodology seems to veer back to a focus on the personal to the detriment of the organisational. I may be quite wrong and attention may have been paid to contextual development, but not reported. Balanced approaches are needed and, for me, emancipatory and transformational practice development together offer balance. Perhaps, the paper might stimulate new paths, less travelled, where practice developers work together, not only with clinical application researchers but with all kinds of researchers, for the mutual benefit of, and flourishing for, all.

Critical questions
1. Why do you think Albertine and Maria didn't make themselves more visible in this report on the experience of clinical application research and articulate in greater depth the facilitation role, relationships and strategies they used?
2. Why do you think they called ward team members 'participants' and not 'co-inquirers' or 'co-researchers' or 'practitioner-researchers'?
3. Are there any aspects of caring science that could be melded and blended to the facilitation of experiential learning, given that facilitation involves a caring relationship?
4. Do you think it is appropriate for clinical application researchers to meld and blend practice development principles or processes with those of clinical application research?

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Angie Titchen (PhD), Independent Research and Practice Development Consultant; Visiting Professor, University of Ulster, Northern Ireland; Adjunct Professor, Charles Sturt University, Sydney, Australia.