Evolution of Ray's Theory of Bureaucratic Caring

Marilyn A. Ray, RN, PhD, CTN-A, FSfAA, FESPCH (hon), FNAP, HSGAHN, Hon. LL. D Colonel (Ret.)
Florida Atlantic University, The Christine E. Lynn College of Nursing, Boca Raton, Florida

Abstract: An overview and evolution of caring and the theory of bureaucratic caring and interpretations of its central categories are described. Data and models representing its theoretical development, the concept of bureaucracy, and emergence of the theory as a holographic theory are included. Central tenets in the new sciences are explored along with Bohm's corresponding ideas of explicate and implicate orders (holistic science) and spiritual-ethical caring. The theory has broad implications for increasing the knowledge of caring inter-professionally, improving the health and well-being of people, and transforming healthcare bureaucratic organizations nationally and globally, with application in the military healthcare system.

Keywords: caring; complexity; dialectic; holography; bureaucratic caring

Personal Experiences Related to Caring in Nursing

Living a life of caring for others is living the meaning of my life. Over many years as a practicing nurse, the meaning of nursing as a caring profession unfolded and I was interested in participating in the growth of caring as a science and art. The late Dr. Madeleine Leininger, the first nurse anthropologist and Director of the Nurse Scientist Program at the University of Colorado, School of Nursing, was my professor in 1967. She had recently completed her doctorate, studying the culture and care processes of the Gadsup people of Papua, New Guinea. Leininger introduced me to courses in anthropology and nursing and maternal–child culture care in my graduate nursing program. She was in the process of advancing transcultural nursing as a discipline, but at that time, had not yet *coined the phrase.* She, however, said that nursing was a human science and gave us many creative options for cultural study.

I was devoted to hospital nursing. For my Master of Science degree project, I conducted ethnographic nursing research in a hospital as a small culture and was able to demonstrate the need for change from the results of my research. Simultaneously, as my graduate studies began, I was interested in joining the United States Air Force (USAF). The Vietnam conflict was intensifying, and I became focused on serving my country. I was commissioned as an officer beginning first in the Wyoming Air National Guard, following later, in the Air Force Reserve.

After a course of study at the School of Aerospace Medicine in Flight Nursing, I performed duties as flight nurse, flight nurse instructor, and coordinator of education. After flight nursing operations,

http://dx.doi.org/10.20467/HumanCaring-D-20-00043

I continued serving with many different ranks, in challenging educational, administrative, and research roles in aerospace nursing, before retiring and assuming veteran status, for the rest of my military career which spanned 32 years.

When I completed my graduate program in 1969, I moved and accepted a faculty position at the University of California, San Francisco. There, I came upon the book, *On Caring* by Mayeroff (1971), which influenced my teaching approach and students' practice. After also teaching for a period at the University of San Francisco, California, and attending a program of study in Mechoacanejo, Mexico, in cultural anthropology, I relocated back to my hometown of Hamilton, Ontario, Canada. I assumed a faculty position at McMaster University as educational coordinator in the family practice/primary care nursing program. I also began studying for my Master of Arts degree in Cultural Anthropology. I continued my interest and research in organizations, specifically hospitals, as small cultures.

In 1977, Dr. Leininger invited me to be one of the first transcultural PhD students in the new transcultural nursing program at the University of Utah, Salt Lake City, Utah. Dr. Leininger, with Dr. JoAnn Glittenberg Hinrichs, had recently made the declaration to the American Nurses Association that "caring: [is] the essence and central focus of nursing" (Leininger, 1977, p. 1). From then on, my heart and mind were reawakened to caring as my focus of study. In our first nursing theory course in the doctoral program, I was intrigued with the idea of nursing theory and how scholars determined the purpose of nursing and how they incorporated and synthesized theoretical concepts significant to nursing. Never did I think at that time that I would generate a nursing theory of my own. For my course paper, I decided to embark upon a philosophical/metaphysical analysis examining first principles, those related to meaningfulness and understanding of the study of caring: the nature of being and the "whys" of nursing life. I determined that, in nursing, caring, and love are synonymous (Ray, 1981a, p. 32). Subsequently, for my dissertation research, I embarked upon the study of caring focusing on the *meaning and action* of caring in the institutional culture of the hospital. Two grounded theories emerged from a multi-qualitative research approach, ethnography, phenomenology, and grounded theory. A substantive theory of differential caring was generated from categories (concepts of caring) based upon diverse expressions of caring by research participants in different roles and clinical units of the hospital. The next step of grounded theory is formal theory. Thus, a formal theory, bureaucratic caring was discovered illuminating, by means of the Hegelian dialectic, a synthesis of the thesis of caring and antithesis, the bureaucracy or institutional culture (Ray, 1981b).

Purpose of Article

The purpose of this article is a focus on caring, and specifically, the evolution of the theory of bureaucratic caring from a grounded theory to a holographic theory highlighting spiritual-ethical caring and the meaning of the reciprocal flow between the category of spiritual-ethical caring and categories of the bureaucratic organizational system, the political, economic, legal, technological, and social-cultural within the complex hospital organizational culture. A presentation of the concept of bureaucracy and a discussion of the changing story of science in the modern era will facilitate increased understanding of the meaning of the theory and the theory as holographic. An epilogue will follow that introduces application of the theory of bureaucratic caring in military healthcare practice under the authorship of Colonel Marcia Potter USAF NC, DNP, FNP-BC, FESPCH, FNAP, an executive nursing leader in the USAF Medical Service, the Defense Health Agency in Primary Care Nursing, as well as a Consultant to the grant of which I am a partnership liaison, Caring-based Academic Partnerships in Excellence: Veteran RNs in Primary Care (CAPE-V) at Florida Atlantic University, Christine E. Lynn College of Nursing, Boca Raton, Florida.

Brief History of the Formal Study of Human Caring in Nursing

From an anthropological perspective, caring is one of the oldest and most universal developments in human history. In the study of Neanderthal man, some 40,000–100,000 years ago in Europe in the great Stone Age, archaeologists claimed that paramount in human development besides the evolution of the brain, was that of caring, concluding that caring must have been present because people cared for themselves and others by the evidence found in fossil remains of handicapped people, flowers and pottery in grave or burial sites, and hieroglyphs on cave walls showing connected hands (Solecki, in Ray, 1981b).

Scholarship related to the concept of caring within the discipline of nursing has increased exponentially in the last 45 years. Historically, as

nursing knowledge expanded from the time of Florence Nightingale in the mid-19th century to the 20th century, human science and the art of nursing were emerging. Nightingale (1860) asserted that nursing was a reparative process of nature with the proper use of fresh air, light, warmth, cleanliness, and quiet. She pointed to nursing as the art of charity: doing God's work with references to the Sermon on the Mount Her work identified the critical nature of the spiritual and the integral human–environment relationship. In the United States, professional nursing expanded with ideas emanating from early nursing theorists, such as Dock and Nutting, Peplau, Henderson, Wiedenbach, Orlando, Orem, Roy, and Paterson and Zderad, highlighting humanistic nursing (Alligood, 2018; Walker, 2020).

As graduate programs grew in nursing, it was inevitable that further declarations about the meaning of nursing with an emphasis on human dignity, values, interrelationships, dialogue, context, unity, and caring would emerge. The foundations of nursing from studies in philosophy of science, philosophy, human science, and aesthetics furthered knowledge of the discipline.

Many diverse scientific approaches transpired and to some extent challenges to nursing as a humanistic science unfolded. Paterson and Zderad's (1976) was highly criticized from the general nursing science population when I was a doctoral student, causing much disillusionment to the authors and, we, as students of caring science and art. Paterson and Zderad spoke of nursing as an existential engagement directed toward nurturing human potential (Ray, 1981a). Despite those critiques, I was committed to human caring philosophy and human science research studying methods of metaphysics and phenomenology as well as ethnography and ethnoscience.

I was impressed that around the same time as Leininger and Watson's professional declarations of caring in nursing, a Canadian nurse, the late Dr. Sister M. Simone Roach (1984, 2002), who studied at Harvard Divinity School, captured the essence of caring with her philosophy and theology of caring as the human mode of being inspired by faith. She affirmed its professionalization *in* nursing with articulation of the manifest behaviors of commitment, compassion, conscience, confidence, comportment, and competence. While Madeleine Leininger was advancing her ideas about caring, so too, was Jean Watson who proposed nursing as a human caring science, creating her transpersonal caring theory, and interpreting nursing with content expressed first, as caritive factors, and today, as caritas processes, such as loving kindness and equanimity, developing and sustaining a helping trusting authentic caring relationship, creating healing environments, opening to the spiritual, mystery, the unknown; allowing for miracles to name a few to elucidate the nature of nursing (Watson, 1979, 2008, 2018).

In 1978, a small group of professionals including myself, led by Leininger, presented diverse studies of care and caring at the University of Utah at what is recognized as the first Caring Conference in Nursing (Leininger, 1981; Wagner & Gaut, 2008). For example, Leininger identified the call for major philosophical, epistemological, and professional dimensions of caring to advance nursing knowledge; she presented ideas related to culture, nursing, and health, a forerunner to her culture care theory of diversity and universality (Leininger, 1991; McFarland & Wehbe-Alamah, 2018; Wehbe-Alamah & McFarland, 2020); Watson highlighted her transpersonal caring theory and shared the processes of developing her book, *The Philosophy and Science of Caring* (1979, 2008); and the late Em Bevis (1981) presented caring with descriptive forms of love and as a life force shaping the course of humankind, compelling growth, and self-actualization. The late Dolores Gaut, and I, both PhD students, accomplished philosophical analyses of caring. Gaut's (1981) philosophy expressed a theory of caring as action through nurse intentions and purposes, and my philosophy of caring was expressed as love and copresence (oblative or giving and receiving love, with validating concepts of availability, authenticity, communication, acceptance, touch, and empathy (Ray, 1981a)) as the essential nature of nursing. From this original summons, a significant body of caring knowledge has advanced over the years from philosophical, qualitative, and quantitative research inquiry, published primarily in the *International Journal for Human Caring*. Theorists, such as Anne Boykin and Savina Schoenhofer (Boykin & Schoenhofer, 2001; Smith, 2020) advanced significant ideas about the meaning of nursing as caring. Their caring model, *The Dance of Caring Persons*, is a central theme and design at the Christine E. Lynn College of Nursing, Florida Atlantic University, which has become one of the epicenters along with the University of Colorado College of Nursing, first led by Jean Watson, for the study of caring science in the United States. I am pleased, too, at Florida Atlantic University, not only to be a professor of caring science and Emeritus Professor at the

Christine E. Lynn College of Nursing, but also to have shared ideas with members of the Center for Complex Systems and Brain Science and the Pari Center for New Learning (Science, the Arts, Spirit, and Community) in Pari, Italy.

Over the last 45 years, different national and international organizations, such as the International Association for Human Caring, Scandinavian Center for Caring Science, hospitals, faculty, clinicians, and the military have advanced caring under the direction and leadership of many scholars of caring and caring science theories (Rosa et al., 2019; Smith et al., 2013).

My original philosophical analysis of caring as love and copresence became the life force shaping the meaning of caring for me and how it was conceptualized in nursing and in institutional cultures. Literature and my experience told me that caring in nursing was eclipsed in hospital nursing by the medical-symptomatic-cure model early on, and then by the structures of economics and finance. I proceeded to seek understanding of the essential foundational elements of caring with anticipation that research would offer the promise of knowing caring more fully in practice settings. For my doctoral dissertation, I conducted the first research study in a hospital on the meaning of caring. In 1981, the theory of bureaucratic caring was discovered (Coffman, 2018, 2021; Ray, 1981b, 1984, 1989, 2010a, 2018; Ray & Turkel, 2015; 2020; Turkel, 2007).

My Quest for Understanding the Meaning of Caring in Nursing Practice

Forty to 50 years ago in nursing science, methods to study nursing were more positivistic and quantitative, but because of the focus of my PhD program as transcultural, qualitative research methods were introduced (Leininger, 1970, 1985; Ray et al., 2013; Wehbe-Alamah & McFarland, 2020). Also emerging and capturing my interest besides ethnography were phenomenology and grounded theory methods (Glaser, 1978; Glaser & Strauss, 1967; Morse, 2017; Morse et al., 2009; Ray, 1985, 1990, 2010a, 2010b, 2010c, 2010d, 2010e; van Manen, 1994). I was therefore committed to qualitative research, systematic ways of inquiry, and language that represent our world through reflection, comparative analysis of meaning in narratives, memos and observation, and the generation of theories, the methods of ethnography, phenomenology, and grounded theory respectively (Morse et al., 2009; Ray, 1985; van Manen, 2014). I decided (with the help of my committee) to incorporate all the qualitative methods—ethnography to understand the organizational culture, phenomenology to illuminate the meaning of the lived experience of caring, and grounded theory to generate substantive and formal theories of the social-cultural process in the complex organization (Coffman, 2018, 2021; Ray, 1981b, 1989, 2010a, 2010b, 2010c, 2010d, 2010e, 2018; Ray & Turkel, 2015, 2020). For this study, culture was described as a socially-constructed way of life of a people: the blueprint, values, beliefs, and attitudes, and the patterns of meaning and action for the ways of living of human beings (Leininger, 1970; Ray, 2010b, 2016). Meaning was viewed as central to phenomenological or experiential and contextual knowledge. "Meaning is always within context and context incorporates meaning. Both are produced by human actors [persons] through their actions" (Mischler, 1979, p. 14). The strength of the integrated methods in the *field* was the generation of the widest variety of qualitative data gleaned from multiple participants (192 nurses, administrators, patients, physicians, and other respondents), which laid the foundation for analysis and discovery of grounded theories (Ray, 1981b).

Two theoretical structures with an institutional/conceptual framework generated from qualitative data and evidence related to the social system were developed. First, the *substantive* theory development facilitated the discovery of the *theory of differential caring* from the e*xperiential and conceptual patterns of the meaning* of caring and their categories and properties from participants within *all* units of the hospital culture revealing that nurses, other professionals, and patients expressed the meaning of caring from their distinct roles of caring within areas where professionals worked and patients inhabited. This knowledge thus became significant for the development of the *substantive* theory of *differential caring*. Though, there was more than one meaning expressed, I interpreted the *dominant* caring category within each hospital unit. The substantive theory, *differential caring*, showed that the different units fostered different dominant caring modalities based on the type of unit and organizational goals, values, and different care needs, such as technological caring meanings emerged from critical care units, cardiac and step-down units, emergency, operating and recovery rooms; spiritual-ethical caring meanings emerged from the oncology unit; political and economic caring meanings emerged from administration, budget and finance and material's

management departments, and medical–surgical nursing care units (surprisingly enough); and social-cultural, educational and physical meanings of caring from units, such as the rehabilitation, and physical therapy departments. As examples, the chief financial officer (CFO) stated that the meaning of caring to him was "maintaining the economic viability of the hospital," which I interpreted as the economic category; nurses in the critical care unit shared that caring meant integrating caring with the technology which I interpreted as the technological category; participants in the oncology unit shared the importance of spiritual-ethical, religious components of caring, which I interpreted as ethico/religious/humanistic category, and so forth (see Figure 1). A classification system of the expressions and meanings of caring also was identified and organized in the following way: psychological (affective and cognitive), practical (social organization, technical), interactional (physical and social), and philosophical (spiritual, ethical, and cultural) (Ray, 1981b, 1984).

Second, the discovery of the *formal* theory of *bureaucratic caring* highlighted the paradox of caring within the bureaucracy or institution. Inspired by the philosophy of Hegel toward a reconciliation or a transformation of the paradox, I selected his method of the dialectical analysis, thesis, antithesis, and synthesis (Kojève, 1969). The laws of the dialectic are the transformation of quantity into quality (qualitative difference), the connecting of polar opposites into a codetermining relationship (inter-identification), the negation of the negation (thesis, antithesis, synthesis), and the spiral form of development (transformation and change) (Moccia, 1986). Hegel's dialectic helps us to understand the limits of one-sidedness, a focus on one side or the other: in this research, either on caring or on the institution or bureaucracy wherein caring takes place. Hegel's system proposed that every negation had a positive role, and out of human alienation or distinction was born a new form of reconciliation or unity (Baum, 1975). The process of reconciliation of the paradox encompassed phases of one process, the thesis (caring), the antithesis (institutional culture or bureaucracy) to the transformation, the synthesis, and the theory of bureaucratic caring. We can appreciate that caring is the convergent focus of professional nursing as determined by its essence or its humanistic dimension, is highly differential depending on its structure in organizations (ethical, religious, legal, economic, political, technological, social-cultural, educational, and physical), and is bureaucratic given the extent to which its meaning can be understood in relation to the rational-political, legal social structure of a hospital and the extent to which the concept of bureaucratization is a part of the structure of complex organizations and social structures (Ray, 1981b, 1989, 2013a). A model of caring from this research was designed (see Figure 1). It identifies that both the political and economic categories were more dominant than other categories in this research.

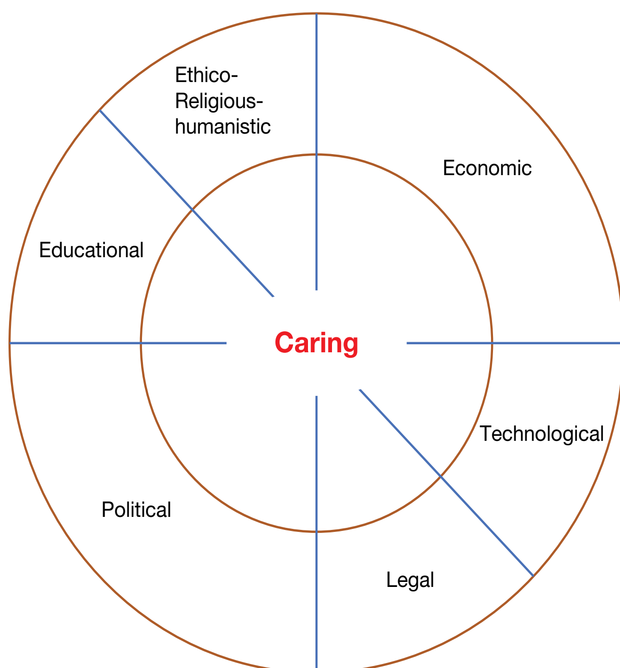

Figure 1. Original model of the Theory of Bureaucratic Caring.

Note. All theoretical models also appear in Turkel (2007), used with permission

The *initial* model, designed as a structure from the expressive data about the meaning of caring, featured the central category of caring and its interrelationship between caring and economics (economic caring), caring and the political (political caring), caring and technological (technological caring), caring and legal (legal caring), caring and educational (educational caring), and caring and ethico-religious, spiritual (Ray, 1981b, 1989, 2010a). Collectively, these data facilitated the discovery of the theory of differential caring. Further reflection, discernment, and current social and professional literature with the Hegelian dialectical analysis formed the basis for reconciliation of the *paradox* of caring in the organization, a synthesis incorporating humanistic, spiritual, and ethical caring *and* the hospital phenomena, the bureaucratic system revealing the theory of bureaucratic caring. In short, the organizational cultural context played a

critical role in understanding the meaning of caring in the hospital, and other complex systems from that time of the earliest research to present applications of the theory in practice (Abiri, 2017; Allen, 2013; Chadwell, 2018; Coffman, 2018, 2021; Davidson et al., 2011; Eggenberger, 2011; Glaser, 1978; Glaser & Strauss, 1967; Johnson, 2015; Morse, 2017; Potter, 2020; Potter & Wilson, 2017; Prestia, 2015; Ray, 1981b, 1984, 1985, 1989, 1997a, 1990, 2010a, 2010b, 2010c, 2010d, 2010e, 2016, 2017, 2018; Ray & Turkel, 2019, 2012, 2014, 2015, 2020; Turkel, 2007; Turkel & Ray, 2000, 2001).

The following is an explanation of the concept, bureaucracy, to facilitate its historical significance in complex organizational systems and this research. The explanation will clarify its identification within the theory of bureaucratic caring and position its significance in guiding the development of the theoretical models within the theory.

Commentary on the Meaning of Bureaucracy

The Meaning of Bureaucracy

Please see the full publication of this information in the World Repository for Nursing Theories under Dr. Marilyn Ray's Theory of Bureaucratic Caring in neurology.

I have been asked many times why Bureaucratic Caring. Bureaucracy, rather than corporate or any other term, was the word that I chose to express my theory because it had the widest range of meanings *reflecting my research* in the hospital. Bureaucracy, however, has multiple meanings, often associated with diverse metaphors, such as, organizations, corporations, political systems, cultures, machines, psychic prisons, brains, and organisms (Korten, 1995; Morgan, 2006). Weber, the foremost sociologist and economist, and considered one of the great thinkers of the concept of bureaucracy, illuminated its meaning from the early 1920s which is still relevant today (Boone & Bowen, 1980; Leavitt, 2005, Mises, 2017). Bureaucracies are represented generally as complex systems with hierarchies of roles with divisions of labor, and political, legal, economic, and technological dimensions. As such, they are social-structural entities of society with sociocultural characteristics. Often bureaucracies are viewed negatively, however, as anthropologists, Britan and Cohen (1980) stated,

> T[t]he study of bureaucracies is, in effect, the study of the most salient and powerful organizations of the contemporary world. How bureaucracies react to their own problems and/or ours determine how we live-indeed whether we live at all. [Recall what is happening in many countries of the world with the 2020 COVID-19 pandemic, wars in the Middle East, displacement of persons in Syria, Central Africa, Myanmar or Central America, racial injustices, social unrest, abuse of power and civil rights, nationalism, and so forth.] Whether we like it or not, humankind is being driven into a bureaucratized world whose forms and functions, whose authority and power, must be understood if they are ever to be even partially controlled. (p. 27)

Researchers and planners must establish which aspects of bureaucratic growth benefit a particular organization or population. In my study, I identified, from interviews of nurses, administrators, patients, and others, an understanding of the central categories of caring within bureaucracy which are considered dynamic, creative, or emergent, and thus were essential for growth, such as, spiritual-ethical caring (compassion, empathy, and moral courage) and the organizational structural categories identified in this theory of bureaucratic caring (Britan & Cohen, 1980; Davidson et al., 2011; Ray, 1989, 2010a; Ray & Turkel, 2012, 2014, 2020).

Despite the calls over recent decades for the end of bureaucracy and the rise of the intelligent decentralized organization (Pinchot, 1994), or the development of flat structures or systems, organizational experts point out that when there are leaders, there are followers which implies a hierarchy, a bureaucracy. The organizational theorist, Leavitt (2005) remarked that hierarchies are here to stay. Wilkerson (2020) identified how hierarchies themselves, so well established in the United States continue to promote and contribute to racial injustice and inequality. Thus, professionals and others, must learn to manage bureaucracies more humanely, effectively, and efficiently with interdisciplinary leadership, caring, ethics, human, cultural and spiritual rights, person-centeredness, *and* reasoned attention to what is happening. From a healthcare perspective, the COVID-19 pandemic and its challenges has shed light on the need for increased understanding of caring for patients within complex organizations, including primary care. *New* learning modalities, sometimes occurring in the moment or by reflective planning, have facilitated transformation on the front lines of care, leading to new ways of clinical caring including telehealth, new applications of technology for survival and the dying, and new forms of

interprofessional interaction with shared governance, and caring for each other. Bureaucracies, not just healthcare organizations, but also, other corporate systems can become more humane, person-centered, and transculturally appropriate by recognizing that they are living systems, the whole and the parts are interdependent (Bohm, 1980), thus, they can become communities of caring (Ray, 2010c).

Evolution of the Holographic Paradigm and the Theory of Bureaucratic Caring

My further analysis of caring revealed the moral dilemma of economic caring (Ray, 1987a), and phenomenological research revealed a depth of meaning of caring in administration, intensive care, and step-down units (Ray, 1987b, 1997a, 1998b, 2007; Wu & Ray, 2016). Spiritual-ethical caring was emerging as a critical component in relation to economics, and the use and abuse of technology and patient care in the organizational culture. Although technological and economic caring were dominant expressions of caring, conflicts supervened about the lack of or attention to economic resources used for nurse caring, and how much technology is too much for patients and how were or should decisions be made in the handling of technology in hospital units. In my data analysis, humanistic virtues (compassion, morality, and spirituality) and principle-based ethics (doing good, doing no harm, and being just), and economic resource concerns took precedence among practicing nurses. The lack of respectful interprofessional communication to discern the interface between caring and technology unfolded and was the key to understanding ethical issues, such as moral blindness or moral indifference among physicians that impacted positive moral decision-making of patients and their families regarding the use or potential abuse of technology within the intensive care units of these research organizations.

Subsequent research followed with coprincipal investigator, Dr. Marian Turkel. Over the course of more than a decade of research, we were fortunate to receive federal grant monies of almost $1 million from the Uniformed Services University of the Health Sciences, Department of Defense, focusing primarily on the study of the economics of caring in multiple civilian and military organizations and healthcare systems (Coffman, 2018; Davidson et al., 2011; Ray, 2017, 2018; Ray & Turkel, 2019, 2005, 2012, 2014, 2015, 2020; Ray et al., 2002; Turkel & Ray, 2000, 2001, 2003, 2004; Turkel, 2007). Continued research unfolded using mixed methods. Theoretical testing with interviews, expert panels, tool development with factor analysis, and statistical techniques led to many iterations of tools to the final development of patient and professional caring questionnaires (Ray & Turkel, 2019; Turkel & Ray, 2000, 2001), which provided new insights into the complexity of healthcare systems and the economic and moral value of caring. Data revealed that caring was central and *spiritual-ethical caring* was the strongest determinant of patient satisfaction in the many hospitals we studied. *Transtheoretical development* emerged. Turkel's dissertation research revealed the grounded theory, *Struggling to find a balance: The paradox between caring and economics* (Turkel, 2001), and Turkel and my theories of relational caring complexity and workforce redevelopment emerged from our extensive funded research of caring from 1996 to 2004 (Ray & Turkel, 2005, 2012; Ray et al., 2011; Ray et al., 2002; Turkel & Ray, 2000, 2001).

Dr. Turkel and I received the federal award from the Association of Military Surgeons of the United States (AMSUS) and another from the Uniformed Services University of the Health Sciences for Excellence in Research. A text by Davidson, Ray, and Turkel, *Nursing, Caring and Complexity Science for Human-Environment Well-Being,* was published in 2011 (AJN Book of the Year for Professional Development), which centered nursing and caring and the theory of bureaucratic caring within complexity science, holonomy, and chaos theory, the new sciences that were emerging within 20th century science.

Transformation of the Theory of Bureaucratic Caring as a Holographic Theory

After the years of research, both on my own and with Dr. Marian Turkel, on the theory of bureaucratic caring, including the evolution of transtheoretical developments of caring expanded the definitions of caring, and a new descriptive holographic model based upon complexity science, holonomy, and chaos theory. It was clear that science in general and our science, in particular, were telling the story that everything is interconnected, and nothing is fundamentally separate. Due to limitations, a display of a true holographic model/image is impossible, but the arrows and broken lines represented illustrate the theoretical model as dynamic and interconnected. The model illuminates the importance of the category of spiritual-ethical caring in the organizational

culture, which relates interdependently to each of the independent system categories in the theoretical model (see Figure 3). As such, the holographic image combines spiritual-ethical caring with each structural category of the organization (political, economic, technological, legal, physical, educational, and social-cultural) with spiritual-ethical caring—thus, revealing that the whole *is* the part and the part *is* the whole as the quantum theorist, Bohm discovered (1980).

Definitions of Categories of the Holographic Theory of Bureaucratic Caring

Morse (2017) claimed that categories (concepts, dimensions, and domains) refer to an area of study, an item or collection of behaviors with particular attributes/characteristics, are created in social interaction, allow us to communicate, and facilitate the development of theory (inter-related concepts). Categories in this study are related to and organized into the structural categories identified first from the grounded, ethnographic, phenomenological research data of the meaning of caring expressions within the complex institutional culture of the hospital, and then expanded from further research. The structure is the *theoretical models* (Figures 1, 2, and 3) highlighting both the independent and interdependent correspondence of categories identified in the theory of bureaucratic caring.

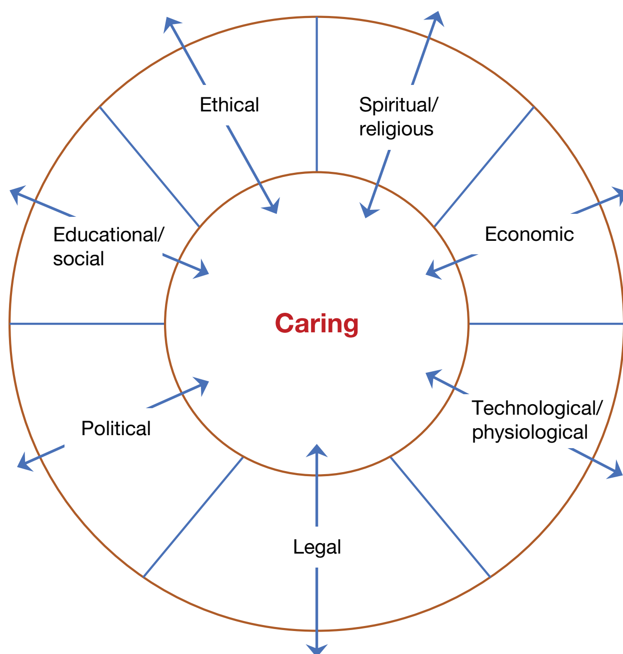

Figure 2. Subsequent Grounded Theory of Bureaucratic Caring.

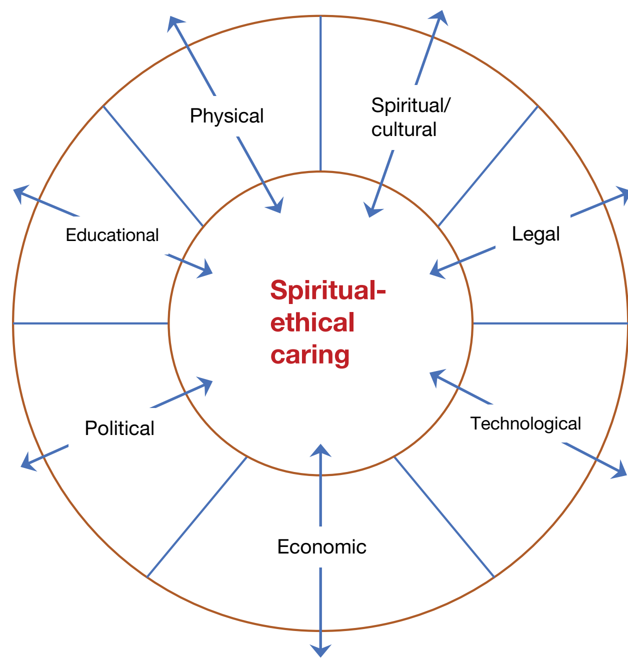

Figure 3. The Holographic Theory of Bureaucratic Caring.

The categories and their definitions have evolved from their initial identification from research data in my dissertation (Ray, 1981b) to the present (Chadwell, 2018; Coffman, 2018, 2021; Poudel & Ray, 2019; Ray, 1987a, 1987b, 1997b, 1998b, 2007, 2010a, 2010b, 2013a, 2016, 2018; Ray & Turkel, 2012, 2020; Turkel & Ray, 2000, 2001, 2003). Definition of the categories are outlined below:

Bureaucratic caring theory: A purposeful grounded, ethnographic, phenomenological theory generated and synthesized from qualitative research analysis of the meaning and central thesis of caring expressed by diverse participants (nurses, administrators, patients, and other healthcare professionals). The theory and model illuminate *spiritual-ethical caring*, the dominant, unifying, and dynamic category (in the center of the theoretical model) that interconnects holographically all independent/interdependent categories within the bureaucracy, the complex organization of a hospital (physical, social-cultural, political, legal, economic, technological, and educational categories).

Caring: The relationship between charity and right action, between love as compassion in response to suffering and need, and justice or fairness in terms of what ought to be done within an understanding of cultural/organizational dynamics.

Spiritual-Ethical Caring: A focus on respect for the values of holism-body, mind, spirit, and organizational interconnectedness, the Divine or God-centeredness, creativity, and moral choice for the good of others, professions, organizations, cultures, and society.

Social-Cultural: Values, beliefs, and attitudes regarding ethnicity, race, patterns of identity, and diverse social structures within families, communities, institutions/organizations, and societies.

Physical: Dynamic forces related to the physical, mental, and emotional states of being, health/illness, genomics, healing, and dying (or peaceful death) of patients or persons in organizational healthcare cultural contexts.

Educational: Formal and informal teaching-learning patterns of meaning, communicating the dynamics of care/caring, processes, and programs to improve the health, healing, and well-being of persons, families, communities, and organizations.

Economic: Exchange of goods, money, and services, including an understanding of caring as an interpersonal value-added resource and value response, insurance systems, healthcare principles to appreciate and manage budgets, and to maintain the financial viability and fiscal management of an organization that interfaces with the larger community and social structure of society.

Political: Patterns of energy and communicative action associated with authority, power, control usually of leaders, administrators, and clinical staff (nurses, physicians, and allied health personnel). Political relates to the hierarchical systems of organizations, roles and their differentiation or stratification, unions, and governmental influences that facilitate cooperation or challenge competition in complex organizations.

Technological: Nonhuman resources, such as machines and diagnostic instruments, pharmacologic agents, computers, electronic health records (EHRs), smartphones and social media in the virtual world, robots, and the ethical technological caring knowledge and skill needed to support persons, including culture groups, families, communities, and organizations.

Legal: Factors related to responsibility and accountability for rules, regulations, licensing, policies, standards of practice, procedures, informed consent, rights to privacy, professional behaviors, insurance systems, laws, and issues that endeavor to facilitate social justice, fairness, and stability in complex systems.

The theory of bureaucratic caring, now positioned within complexity science and the holomovement in science (Bohm, 1980; Davidson & Ray, 1991; Peat, 2002, 2020; Ray, 1998a), illuminates that everything is interconnected and interpenetrated by the whole, spiritual-ethical caring (Davidson et al., 2011; Ray & Turkel, 2011, 2012). Categorical meanings of caring related to humanistic and organizational entities, which may seem as separate or independent from each other in the organizational culture, are linked or unified by spiritual-ethical caring which is folded inward. Armed with this knowledge, nurses and administrative professionals gain not only more knowledge, but also a sense of how we can responsibly act as professionals, in essence from a more authentic and holistic place to improve the health and well-being of patients, nurses, staff, and the organization. No one could have imagined how vividly this view in hospitals is unfolding among healthcare professionals and others as we all gain deeper spiritual and ethical insight into the meaning of caring and our interconnectedness locally and around the world with the impact worldwide of the devastating COVID-19. The crisis completely supports the words of physicist, Tudge (2003) "[t]he essence of all ethics [and caring] is personal humility, respect for fellow sentient creatures, and a sense of reverence" (p. 30).

The Story of the Changing Science and the Holographic Paradigm

Eileen Sullivan-Marx, President of the American Academy of Nursing, reminds us that "The Epicenter We Need: [is] Science" (2020, p. 258). To understand the holistic view and holographic image and its interrelationships in the theory of bureaucratic caring, it is important to recognize how science changed in the 20th century. From the time of the classical physics of Newton's laws of thermodynamics and Einstein's theory of relativity to the quantum physics of Bohr, Planck, Heisenberg, Born, Bohm, Capra, Peat, and others, 20th century science was changing dramatically

(Peat, 2002). Science was no longer considered an objective and independent reality where *matter* was all that counted (Peat, 2002, 2008). The new emerging field of quantum theory and later complexity science/s revealed that mind and matter were interconnected: everything in the universe is relational, informational, nonlinear, dynamic, uncertain, and emergent. New research showed that scientists were seeking unity, the unity of matter *and* mind (Peat, 2002). In the new science, it was recognized as an intersubjective phenomenon, that is, the observer played a significant role in the process of observation in research highlighting Heisenberg's principle of uncertainty (Peat, 2002). Quantum science too revealed that even "[o]pposing things can happen at the same time, in the same space, without contradicting each other" (Thoma, 2003, p. 17). For example, we can see that process unfolded within the theory of bureaucratic caring where seemingly paradoxical humanistic and organizational categories are interconnected. No longer in science was there an attitude of dominance (or control) toward the universe, but an attitude of respect as Tudge (2003) pointed out. The new science revealed that the earth and everything in it was now considered a living organism and scientists claimed that the dynamic patterns need to be understood from a more participatory way of relating. These ideas emerged in my study of caring. I did see caring from the perspective of divine love and an interpersonal loving and ethical process but also, as a dynamic holistic, human-contextual phenomenon. This idea corresponds in part also to the unitary science and integral human–environment nursing theory of Martha Rogers (1970) who was a visionary and intellectual, ahead in many respects in her thinking and conceptualization of science for nursing than the complexity theorists (Smith, 1999, 2011; Walker, 2020). Rogers (1994) stated that "[h]olistic trends are becoming more common and are being incorporated into new ways of thinking . . . ." (p. 3). We can witness the advance of this thinking with concepts like human–environment relationship, holism, and caring in the human health experience in nursing (Newman et al., 2008), and the advancement of holistic nursing with the development and progressive ideas within the American Association of Holistic Nurses (Dossey et al., 2015; Ray, 2015; Rosa et al., 2019).

The Evolving Science/s

Quantum theory is the process of gaining knowledge of physical entities, which, during the classical period of science, seemed to be understood as separate and discrete in space and time. But within quantum science, physical entities are unified, or linked in an underlying pattern of wholeness. Researchers began to answer the questions of what the nature of reality is, how do we know or what constitutes knowledge, and what accounts for change and stability in what is (Battista, 1982). The holomovement and holographic paradigm was born. The physicist, Bohm (1980), declared that the whole is in the part and the part is in the whole, ". . . an undivided flowing movement, unbroken, all encompassing" (Bohm & Weber, in Wilber, 1982, p. 203). The conceptualization of the hologram identifies how every structural element interpenetrates and is interpenetrated by other structures so that the part *is* the whole, and the whole reflects every part (Bohm, 1980; Bohm in Peat, 2020; Wilber, 1982). This dynamic, undivided wholeness holographically reveals that each part is informed and enriched by the other (Bohm & Weber, in Peat, 2002, 2020; Wilber, 1982).

Complexity Science/s

Another development within science emerging in the 20th century, especially in the 1980s and 1990s that transformed the view of nature and social-cultural systems was the emergence of *complexity science/s* (Bar Yam, 2004; Briggs & Peat, 1989; Davidson & Ray, 1991; Davidson et al., 2011; Goodwin, 2003; Peat, 2002, 2008; Ray, 1998a; Smith, 2011; Swinderman, 2011; Zimmerman et al., 2008). Included in complexity sciences are ideas of the interconnectedness of all dynamic phenomena or patterns related to nature, biological and ecological systems, political and economic/business systems, organizational and legal systems, religious and educational systems, technological systems (computers, virtual knowledge, social media, and robotics), sociocultural systems, and healthcare systems. Again, many of these complex phenomena are included in the theory of bureaucratic caring. Knowledge and interaction of complex systems gave insights into the creativity of the world and how all scientists, theologians, and others should relate. Goodwin (2003) remarked that scientists should be cautious in terms of how they relate to all living things when knowledge seeking. As such, it is the *interactional or relational* aspect of knowledge or information that makes it holistic rather than mechanistic (Battista, 1982). All living things and the knowledge generated are holistic and relational, and as we engage, ways of participating give us increasing insight into the

awesome characteristics of ecosystems, organizations, human beings, families, communities, and nation states to determine their vulnerabilities and cohesion (Goodwin, 2003). In our era, we can add to this knowledge and vulnerability, the COVID-19 pandemic. Maturana and Varela reminded us that "[w]e have only the world we can bring forth with others, and only love helps bring it forth . . . [t]his is the way of 'science with love,' which is the essence of the holistic approach to understanding and action" (in Goodwin, 2003, p. 14). The spiritual-ethical caring category dominant and interrelational in the theory of bureaucratic caring reinforces the notion of *complex organizational science with love*. Science with love is a form of the timeless wisdom, wholeness, and creativity within the transformational process of change that takes place after turbulence in chaos theory, another of the sciences that emerged from research in the late 20th century (Briggs & Peat, 1999; Gleick, 1987; Peat, 2002).

Chaos Theory

Understanding the universe as holographic and its unfolding acknowledged the emergence of chaos science, a theory within complexity science/s (Briggs & Peat, 1999; Gleick, 1987). Chaos theory summons us to reflect upon the structures and bureaucracies that surround us, such as the workplace to the community in which we live, schools, hospitals, religious organizations, multinational corporations, nation states, even the United Nations (Peat, 2002). How do these organizations function, how do people communicate within them, how rigid or flexible are they, what do their buildings look like, how are people positioned within them? Chaos theory speaks to the underlying interconnectedness that exists in seemingly unplanned events, for example, the *butterfly effect* discovered by the researcher and meteorologist, Lorenz, who stated that subtle or tiny influences of chaotic weather patterns could make a huge impact. He echoed the Chinese proverb about the butterfly, "Does the flap of a butterfly's wings set off a tornado in Texas?" (Briggs & Peat, 1999, p. 33). Scientists saw the subtle butterfly effect in countless observations and complex systems. They determined the criticality of choice-making, and how the *choice-making within networks of relationships* should lead to transformation, to something new. In the contemporary era with the COVID-19 pandemic, we can see the subtle effect of a bat with a virus and its transfer to humans in a market in China and then the complex process of affecting the health and well-being of all people and all sociocultural systems worldwide. This outcome prompted the action of a network of scientists in relationship around the world to work on a vaccine to counter the effects of the COVID-19 pandemic. Natural, biological, and human systems are dynamic and relational and possess the capacity to self-organize or organize themselves into patterns or stable structures from chaos, that is, going through a process of transformation at *the edge of chaos*, from both disorder (destruction) and order (creation) (Briggs & Peat, 1999). In nursing, I have referred to self-organization as *relational* self-organization to illuminate the relational aspect of caring in helping/nurturing patients in their need or suffering—their process of transformation from *disorder* to *order* (Davidson et al., 2011; Ray et al., 1995; Ray et al., 2002).

Chaos science opens us to new ways of thinking; it shows us that we live within movement that constantly affects us and creates chaos, both disorder and order toward physical, psychological, and social impacts, and transformation (Briggs & Peat, 1999). In the present age, we can also see how governments, healthcare professionals, and healthcare systems are challenged to change within the chaos of the COVID-19 pandemic (Bruns, et al., 2020). Moreover, given the social issues in the United States and around the world in our current time, we again see chaos theory in reality: the need for transformation, the call for a new creation to address and act collectively on issues of racism, racial injustice, racial and cultural inequities, policing practices, social-cultural determinants of health, transcultural healthcare, and so forth (American Academy of Nursing, American Nurses Association [AAN & ANA], 2020; Oluo, 2019; Ray, 2016; Rosa et al., 2020; Wilkerson, 2020). Briggs and Peat (1999) stated that chaos is ". . . both death and birth, destruction and creation" (p. 4). With the knowledge of chaos theory, we see the importance of choice-making at the edge of chaos (between disorder and order). The *choice-making within networks of social relationships* consequently gives birth to *new order* or transformation (Briggs & Peat, 1999; Ray et al., 1995). Individuals make free choices but conversely, the choices that are made are influenced by the meanings found in relational life and these meanings are the creative changes and result of what is occurring in the collective society itself (Peat, 2002).

Explicate and Implicate Orders

With new insight into quantum science, complexity science/s and the theory of chaos (disorder and order), the holographic paradigm provided scientists with a new way of understanding order, the implicate and explicate orders was presented by the physicist, Bohm (1980; Bohm in Peat, 2020; Wilber, 1982), who gave us the most significant explanation. He stated that the *explicate order* is where things are expressed as separate objects or parts, and the *implicate order* is the flow between matter or material and the mystical, acknowledgement of the moral, the creative, the transcendent or spiritual, where its meaning together relates to undivided wholeness. This wholeness, the implicate order, thus, is simultaneously existing in each explicate part and vice versa (Wilber, 1982). In the theory of bureaucratic caring, both the implicate and explicate orders by means of research and experience are visible. Everything is an unbroken whole; the part *is* the whole and the whole reflects every part (Bohm, 1980). In my reflection on the literature and my own research, and also on a film that I recently viewed, *The Infinite Potential: Exploring the Life and Work of David Bohm* (Pari Center, 2020), there seems to me to be a philosophical and/or religious quest for wholeness in Bohm's ideas as he articulates the explicate order in relation to the implicate order or vice versa. He concluded that there is a flow between the finite (the explicate order, the part), and the infinite (the implicate order, the whole) (Weber & Bohm as cited in Wilber, 1982). To understand this idea further, Hegel (in Vaught, 1982) formulated a philosophy of wholeness that helps us understand the idea of opposites, thesis, antithesis, and synthesis.

Each opposite is the principle of movement of the other. This analysis and conclusion were revealed in the theory of bureaucratic caring. There is an interrelationship or *converging identity* to what is displayed as reality, between the explicate and implicate orders, the transcendent and spiritual folded inward to the explicate (Weber & Bohm, 1982). In his philosophy, Hegel discussed a way to overcome disorder or disintegration with the inclusion of radical opposites (such as caring and bureaucracy in my research) and claimed that mystery, power, and structure, for example, implicate and explicate orders are synthesized or equally fundamental in the quest for wholeness (Vaught, 1982). It is the acknowledgment of difference that allows the wisdom of dialogue to deal with this radical opposition (Vaught, 1982), such as, once more, in my theory, finding ways to communicate and seek understanding in the complex system of a hospital, the interrelationship between spiritual-ethical caring and the bureaucracy. In his writings on *Christianity and Evolution*, Teilhard de Chardin (1969), a philosopher, theologian, and scientist and a claimant of love as the most universal power in the cosmos, insisted that scientific theories could easily coexist with religious faith, a mutual complementary relationship, a middle ground of ideologies as he stated or a synthesis, as Hegel viewed it. In this sense, from my reflection on quantum science *and* as a human caring scientist, there is *room* for the inner mystery of participatory life, thus for God as the mystery of Being or the *compassionate we* within the order of nature, for the *heart*, for love as the motivation of caring, for loving kindness, for morality (wisdom), for free will and for miracles (Aquinas, 1967; Collins, 2007; Merton, 1979; Ray, 1981a, 1997b, 2013b, 2015; Rosa et al., (2019); Teilhard de Chardin, 1967; Trasancos, 2014; von Hildebrand, 1965; Watson, 2018). Bohm's philosophy and theory of the quantum illustrates that this is true, however, currently, many scientists ignore or denounce this coexistence.

In the theory of bureaucratic caring, I began to understand the depth of meaning of the new science, and seeing the theory within a holographic paradigm: the real world context of the hospital, the economic, political, legal, technological, sociocultural, the parts or explicate or finite order as expressions of caring with the movement or flow of the infinite (spiritual-ethical caring). When enfolded, embraced, or synthesized, the spiritual-ethical category and the parts (system categories) are identical, however, often difficult to fully grasp. The idea emerging within quantum science as the "science with love" (Goodwin, 2003, p. 14), I believe is lived out in the theory of bureaucratic caring. It is interesting to note that this idea of love, of course, is central to religion and to caring science (Bevis in Ray, 1981a, 1997b; Sacred Scripture, Holy Bible, 1987; Teilhard de Chardin, 1967, 1969; Watson, 2018). The futurist, Kurzweil (2005, 2012), noted that the coming world is singularity, primarily through the social impact of technology and artificial intelligence. He claimed that technology and science are one; the age of spiritual machines is near (Kurzweil, 2005). How true this is becoming with the advance of humanoid caring robots (Poudel & Ray, 2019; Tanioka et al., 2017; Wolf et al., 2019), and even the seeking of understanding of the physics of consciousness, the brain making changes within itself (Thomas, 2018).

Conclusion

Anshen remarked that "recognition that all great changes are preceded by a vigorous intellectual re-evaluation and reorganization" (1971, p. 116). Caring science in nursing followed this maxim. The theory of bureaucratic caring emerged initially from vigorous research in the hospital culture, and since its discovery over 40 years ago, the theory has been enhanced by further research and insight into organizational healthcare systems, and the changes in science: quantum theory, complexity sciences, chaos theory, and a holographic world view (Coffman, 2018, 2021; Davidson et al., 2011; Ray, 2018; Ray & Turkel, 2012, 2014, 2020). Significant in the evolutionary process in the theory of bureaucratic caring was the holographic paradigm with its focus on the explicate and implicate orders, and flow between the structures of political, economic, legal, technological, educational, and sociocultural parts in the organization (the explicate order) and spiritual-ethical caring (the implicate order). These phenomena are interpenetrated by each other. Overall, the historical evolution of this theory shows that interactions and symbolic meaning systems of caring are formed and reproduced from the creation or construction of/or revelation of dominant values held and expressed within nursing, administration, and science. By means of decades-long research, the meaning of nursing and caring in the organizational culture or bureaucracy is holographic in nature (the interpenetration of the implicate and explicate orders). Humanistic, spiritual, and ethical processes, the characteristics of spiritual-ethical caring, are integral *with* the structures of the bureaucracy or organizational system. Nursing situations in practice involve an infinite unfolding and enfolding of information and actions that can be viewed as explicate and implicate orders in the decision-making process. The networks of relationship for the system and persons within them are dynamic, chaotic, always relational, creative, transforming, and emerging, As Bohm (1980) noted, in his approach to relational dialogue, there is the free flow of meaning between and among people in communication. With some exceptions, and the complexity of the healthcare system or hospital systems-at-large, in the case of nursing situations, a transformation for nurses and patients takes place moment by moment, what Watson (2008, 2018) calls the caring moment; Barry et al. (2015) call the art and science of caring in the nursing situation; and I call relational self-organization (Davidson et al., 2011; Ray et al., 1995) to accomplish the good and avoid potential maleficence. The theory of bureaucratic caring illuminates the view that nurses whether at the bedside, in primary care or in administrative and educational leadership roles are and must continue to be the locus of caring language and action/s within bureaucracies. The bureaucracy/organization is a living entity (Morgan, 2006; Nirenberg, 1993; Ray & Turkel, 2012, 2014). By integrating the theory of bureaucratic caring in practice, nurses can *experience and cocreate caring* in a new way; a change that does not repel or keep at bay the organization but incorporates it to reveal a renewed understanding of the critical nature of spiritual-ethical caring and its impact on bureaucratic system categories, the integral human–environment relationship.

Epilogue

Application of the theory of bureaucratic caring has taken place in many organizations, from hospitals to clinics, to public health agencies, labor and delivery rooms, correctional facilities, nursing homes, primary care, pharmacology, genomics, and to the military healthcare system (Coffman, 2018, 2021; Potter, 2020; Potter & Wilson, 2017; Ray, 2018; Ray & Turkel, 2020). Most of the transformative application of the theory, however, has taken place in the USAF and the Defense Health Agency. A series of articles to follow in this *IJHC* volume authored by Colonel Marcia Potter, USAF NC, DNP, APRN, uncovers how the Theory of Bureaucratic Caring has unfolded in the military healthcare system by the development of a professional person-centered caring practice model for the USAF, expanding the theory within the TriServices of the Defense Health Agency, the USAF, the Army, and the Navy; transformations within the military healthcare system as a result of the COVID-19 pandemic; and changes to the military primary care system with new and creative telehealth approaches to care (Hogg, 2017, 2018; Potter 2017a, 2017b, 2017c, 2020; Ray 2018). In keeping with the holographic nature of the theory of bureaucratic caring, nurses and other professionals bring caring into being; they determine what makes human communities and complex organizations possible as *living* organizations, and what is edifying to our spiritual well-being and intellectual and professional lives!

References

Abiri, O. (2017). *Examining the relationship between Labor and Delivery nurses' perceptions about unit safety, physician-nurse communication and care delivery structures*. Dissertation, Christine E. Lynn College of Nursing, Florida Atlantic University, Boca Raton, FL.

Allen, S. (2013). *An ethnonursing study of the cultural meanings and practices of clinical nurse council leaders in shared governance*. Dissertation, University of Cincinnati College of Nursing, Cincinnati, Ohio.

Alligood, M. (2018). *Nursing theorists and their work* (9th ed.). Elsevier.

American Academy of Nursing, American Nurses Association. (2020, August 4). *The American Academy of Nursing and the American Nurses Association call for social justice to address racism and health equity in communities of color*. *info@aannet.org*.

Anshen, R. (1971). What this series means. In M. Mayeroff (Ed.), *On caring*. Harper Perennial.

Aquinas, T. (1967). The emotions. In *Summa Theologiae* (E. D'Arcy, Trans.). (Vol. 19). McGraw-Hill.

Barry, C., Gordon, S., & King, B. (2015). *Nursing case studies in caring: Across the practice spectrum*. Springer Publishing.

Bar-Yam, Y. (2004). *Making things work: Solving complex problems in a complex world*. NECSI, Knowledge Press.

Battista, J. (1982). The holographic model, holistic paradigm, information theory and consciousness. In K. Wilber (Ed.), *The holographic paradigm and other paradoxes* (pp. 143–150). New Science Library.

Baum, G. (1975). *Religion and alienation*. Paulist Press.

Bevis, E. (1981). Caring: A life force. In M. Leininger (Ed.), *Caring: An essential human need* (pp. 49–59). Charles B. Slack.

Bohm, D. (1980). *Wholeness and the implicate order*. Routledge.

Boone, L., & Bowen, D (Eds.). (1980). *The great writings in management and organizational behavior*. PennWell Publishing Company.

Boykin, A., & Schoenhofer, S. (2001). *Nursing as caring* (2nd ed.). Jones & Bartlett.

Briggs, J., & Peat, F. D. (1989). *Turbulent mirror*. Harper & Row.

Briggs, J., & Peat, F.D. (1999). *Seven life lessons of chaos: Timeless wisdom from the science of change*. Harper Collins.

Britan, G., & Cohen, R. (1980). *Hierarchy & society: Anthropological perspectives on bureaucracy*. Institute for the Study of Human Issues.

Bruns, D., Kraguljac, N. V., & Bruns, T. (2020). COVID19: Facts, cultural considerations and risk of stigmatization. *Journal of Transcultural Nursing*, *3*(4), 326–332. https://doi.org/10.1177/1043659620917724

Chadwell, K. (2018). *Caring from the inside in an era of precision health [Genomics/Bureaucratic Caring Categories]*. ELSI Congress for Ethical, Legal, Social Implications of Precision Health.

Coffman, S. (2018). Marilyn Anne Ray's theory of bureaucratic caring. In M. Alligood (Ed.), *Nursing theorists and their work* (9th ed., pp. 80–97). Elsevier.

Coffman, S. (2021). Marilyn Anne Ray's theory of bureaucratic caring. In M. Alligood (Ed.), *Nursing theorists and their work* (10th ed.). Elsevier.

Collins, F. (2007). *The language of God: A scientist presents evidence for belief*. Free Press.

Davidson, A., & Ray, M. (1991). Studying the human-environment relationship using the science of complexity. *Advances in Nursing Science*, *14*(2), 73–87. https://doi.org/10.1097/00012272-199112000-00008

Davidson, A., Ray, M., & Turkel, M. (Eds.). (2011). *Nursing, caring and complexity science: For human-environment well-being*. Springer Publishing.

Dossey, B., Keegan, L., Barrene, M., & Blasko, H. (2015). *Holistic nursing* (7th ed.). Jones & Bartlett.

Eggenberger, T. (2011). *Holding the frontline: The experience of being a charge nurse in an acute care setting*. Dissertation, Christine E. Lynn College of Nursing, Boca Raton, FL.

Gaut, D. (1981). Conceptual analysis of caring: Research method. In M. Leininger (Ed.), *Caring: An essential human need*. Charles B. Slack.

Glaser, B. (1978). *Theoretical sensitivity*. Sociology Press.

Glaser, B., & Strauss, A. (1967). *The discovery of grounded theory: Strategies for qualitative research*. Aldine.

Gleick, J. (1987). *Chaos: Making a new science*. Penguin Books.

Goodwin, B. (2003). Patterns of wholeness: Holistic science. *Resurgence*, *216*, 12–14.

Hogg, D. (2017). *TNF Practice Model*. Air Force Knowledge Exchange.

Hogg, D. (2018, June 27). *Uniformed corps chief updates*. Conference session, American Association of Nurse Practitioners National Conference, Denver, CO, United States. https://www.aanp.org

Holy Bible. (1987). *The new American bible*. Thomas Nelson.

Johnson, P. (2015). Ray's theory of bureaucratic caring: A conceptual framework for APRN primary care providers and the homebound population. *International Journal for Human Caring*, *19*(2), 41–44. https://doi.org/10.20467/1091-5710-19.2.41

Kojeve, A. (1969). *Introduction to the reading of Hegel*. Cornell University Press.

Korten, D. (1995). *When corporations rule the world*. Berrett-Koehler Publishers and Kumarian Press.

Kurzweil, R. (2005). *The singularity is near*. Viking.

Kurzweil, R. (2012). *How to create a mind: The secret of human thought revealed*. Penguin Books.

Leavitt, H. (2005). *Top down: Why hierarchies are here to stay and how to manage them more effectively*. Harvard Business School Press.

Leininger, M. (1970). *Nursing and anthropology: Two worlds to blend*. Wiley.

Leininger, M. (1977). The phenomenon of caring. Part V, Caring: The essence of nursing and central focus of nursing. *Nursing Research Report*, *12*, 2.

Leininger, M. (Ed.). (1981). *Caring: An essential human need*. Charles B. Slack.

Leininger, M. (1985). *Qualitative research methods in nursing*. Grune & Stratton Publishers.

Leininger, M. (1991). *Culture care diversity and universality: A theory of nursing*. National League for Nursing Press.

Mayeroff, M. (1971). *On caring*. Harper & Row.

McFarland, M., & Wehbe-Alamah, H. (2018). *Leininger's transcultural nursing: Concepts, theories, research & practice* (4th ed.). McGraw-Hill Education.

Merton, T. (1979). *Love and living*. Harcourt Brace.

Mischler, E. (1979). Meaning in context: Is there any other kind? *Harvard Educational Review*, *49*(2), 1–19. https://doi.org/10.17763/haer.49.1.b748n4133677245p

Mises, L. (2017). *Bureaucracy*. The Dead Authors' Society. Firs t Published in 1944

Moccia, P. (1986). The dialectics of theory development. In P. Moccia (Ed.), *New approaches to theory development*. National League for Nursing Press.

Morgan, G. (2006). *Images of organization* (2nd ed.). Sage.

Morse, J. (2017). *Analyzing and conceptualizing the theoretical foundations of nursing*. Springer Publishing.

Morse, J., Stern, P., Corbin, J., Bowers, B., Charmaz, K., & Clarke, A. (2009). *Developing grounded theory*. Left Coast Press.

Newman, M., Smith, M., Pharris, M., & Jones, D. (2008). The focus of the discipline revisited. *Advances in Nursing Science*, *31*(1), E16–E27. https://doi.org/10.1097/01.ANS.0000311533.65941.f1

Nightingale, F. (1860). *Notes on nursing: What it is and what it is not*. J. B. Lippincott Company.

Nirenberg, J. (1993). *The living organization*. Pfeiffer Publishing Company.

Oluo, I. (2019). *So you want to talk about race*. Seal Press.

Pari Center. (2020, July 11). *The Infinite Potential: Exploring the Life and Work of David Bohm*[Film]. via Zoom.

Paterson, J., & Zderad, T. (1976). *Humanistic nursing*. Wiley.

Peat, F. D. (2002). *From certainty to uncertainty: The story of science and ideas in the twentieth century*. Joseph Henry Press.

Peat, F. D. (2008). *Gentle action*. Pari Publishing.

Peat, F. D. (2020). Excerpts from infinite potential: The life and times of David Bohm. *Pari Perspectives: Ideas in Science, the Arts, Spirit and Community, Language Matters*, *4*, 53–55.

Pinchot, G. E. (1994). *The end of bureaucracy & the rise of the intelligent organization*. Berrett-Koehler Publishers.

Potter, M. (2020). Empowering patients as collaborative partners: A new model for primary care. In T. M. Buttaro, P. Polgar-Baily, J. Sandberg-Cook, & J. Trybulski, (Eds.), *Primary care interprofessional collaborative practice* (6th ed., pp. 15–21). Elsevier.

Potter, M., & Wilson, C. (2017). Applying bureaucratic caring theory and the chronic care model to improve staff and patient self-efficacy. *Nursing Administration Quarterly*, *41*(4), 310–320. https://doi.org/10.1097/NAQ.0000000000000256

Potter, M. (2017a, Jun. 21). Bureaucratic caring theory and leadership navigation. *Conference session*. Innovations in Faith-based Nursing Conference, Marion, IN.

Potter, M. (2017b, Oct. 17-19). Bureaucratic caring theory and leadership navigation. *Conference session, American Association of Colleges of Nursing*. Washington, DC. www.aacn.org

Potter, M. (2017c, Oct. 21-22). Bureaucratic caring theory and leadership navigation. *Conference session*. American Association of Colleges of Nursing Annual Leadership Workshop, Washington, DC.

Poudel, B., & Ray, M. (2019). Consciousness: Humanoid robots and caring in nursing from multicultural perspectives. *International Journal for Human Caring*, *23*(2), 185–195. https://doi.org/10.20467/1091-5710.23.2.185

Prestia, A. (2015). *Chief nursing officer sustainment in the continued practice of nursing leadership: A phenomenological inquiry*. Dissertation, Florida Atlantic University, Boca Raton, Florida.

Ray, M. (1981a). A philosophical analysis of caring within nursing. In M. Leininger (Ed.), *Caring: An essential human need* (pp. 25–36). Charles B. Slack, Inc.

Ray, M. (1981b). *A study of caring within an institutional culture*. Dissertation, University of Utah, Salt Lake City, UT. Disse rtation Abstracts International 42/06. University Microfil ms No. 81–27,787

Ray, M. (1984). The development of a nursing classification system of caring. In M. Leininger (Ed.), *Care, the essence of nursing and health* (pp. 93–112). Charles B. Slack.

Ray, M. (1985). A philosophical method to study nursing phenomena [Phenomenology]. In M. Leininger (Ed.), *Qualitative research methods in nursing* (pp. 81–92). Grune & Stratton.

Ray, M. (1987a). Health care economics and human caring: Why the moral conflict must be resolved. *Family and Community Health*, *10*(1), 35–43. https://doi.org/10.1097/00003727-198705000-00007

Ray, M. (1987b). Technological caring: A new model in critical care. *Dimensions in Critical Care*, *6*(3), 166–173. https://doi.org/10.1097/00003465-198705000-00008

Ray, M. (1989). The theory of bureaucratic caring for nursing practice in the organizational culture. *Nursing Administration Quarterly*, *13*(2), 31–42. https://doi.org/10.1097/00006216-198901320-00007

Ray, M. (1990). Phenomenological method in nursing research. In N. Chaska (Ed.), *The nursing profession: Turning points* (pp. 173–179). McGraw-Hill.

Ray, M. (1997a). The ethical theory of existential authenticity: The lived experience of the art of caring in nursing administration. *Canadian Journal of Nursing Research*, *29*(1), 111–126.

Ray, M. (1997b). Illuminating the meaning of caring: Unfolding the sacred art of divine love. In M. S. Roach (Ed.), *Caring from the heart: The convergence of caring and spirituality* (pp. 163–178). Paulist Press.

Ray, M. (1998a). Complexity and nursing science. *Nursing Science Quarterly*, *11*, 91–93. https://doi.org/10.1177/089431849801100302

Ray, M. (1998b). A phenomenologic study of the interface of caring and technology: A new reflective ethics in intermediate care. *Holistic Nursing Practice*, *12*(4), 71–79.

Ray, M. (2007). Technological caring as a dynamic of complexity in nursing practice. In A. Barnard & R. Locsin (Eds.),

Perspectives on technology and nursing practice. Palgrave MacMillan.

Ray, M. (2010a). *A study of caring within an institutional culture: The discovery of the theory of bureaucratic caring*. Lambert Academic Publishing.

Ray, M. (2010b). *Transcultural caring dynamics in nursing and health care*. F. A. Davis Company.

Ray, M. (2010c). Creating caring organizations and cultures through communitarian ethics. *World Universities Forum Journal*, *3*(5), 41–52. https://doi.org/10.18848/1835-2030/CGP/v03i05/56707

Ray, M. (2010d). Grounded theory method for the study of transcultural nursing. In M. Douglas & D. Pacquaio (Eds.), *Core curriculum for transcultural nursing and health care*. Sage.

Ray, M. (2010e). Phenomenological-hermeneutical research method for the study of transcultural nursing. In M. Douglas & D. Pacquaio (Eds.), *Core curriculum for transcultural nursing and health care*. Sage.

Ray, M. (2013a). The theory of bureaucratic caring. In M. Smith, M. Turkel, & Z. Wolf, (Eds.), *Caring classics in nursing: An essential resource* (pp. 309–320). Springer Publishing.

Ray, M. (2013b). Caring inquiry: The esthetic process in the way of compassion. In M. Smith, M. Turkel, & Z. Wolf, (Eds.), *Caring classics in nursing* (pp. 339–345). Springer Publishing.

Ray, M. (2015). Rootedness in holistic nursing: The ontologic mystery and structure of caring. *Beginnings*, *35*(2), 12–14.

Ray, M. (2016). *Transcultural caring dynamics in nursing and health care* (2nd ed.). F. A. Davis Company.

Ray, M. (2017). *Theory of bureaucratic caring. The nurse theorists' portraits of excellence with Dr. Martha Alligood* [Video #3]. FITNE.

Ray, M. (2018). Theory of bureaucratic caring. In M. J. Smith & P. Liehr, (Eds.), *Middle range theory for nursing* (4th ed., pp. 107–117). Springer Publishing.

Ray, M., Di Dominci, V., Dittman, P., Hurst, P., Seaver, J., Sorbello, B., & Stankes, M. (1995). The edge of chaos: Caring and the bottom line. *Nursing Management*, *9*, 48–50.

Ray, M., Morris, E., & McFarland, M. (2013). Leininger's ethnonursing method. In C. Beck (Ed.), *The Routledge international handbook of qualitative research* (pp. 213-229). Routledge.

Ray, M., & Turkel, C. (2019). Relational caring questionnaires. In K. Sitzman & J. Watson (Eds.), *Assessing and measuring caring in nursing and health sciences* (3rd ed., pp. 213–234). Springer Publishing.

Ray, M., & Turkel, M. (2005). *Economic and patient outcomes of the nurse-patient relationship: Final Research Report*. TriService Nursing Research Program, Uniformed Services University of the Health Sciences.

Ray, M., & Turkel, M. (2011). Complexity science. In H. Feldman (Ed.), *Nursing leadership: A concise encyclopedia* (2nd ed.). Springer Publishing.

Ray, M., & Turkel, M. (2012). A transtheoretical evolution of caring science within complex systems. *International Journal for Human Caring*, *16*(2), 28–49. https://doi.org/10.20467/1091-5710.16.2.28

Ray, M., & Turkel, M. (2014). Caring as emancipatory nursing praxis: The theory of relational caring complexity. *Advances in Nursing Science*, *37*(2), 132–146. https://doi.org/10.1097/ANS.0000000000000024

Ray, M., & Turkel, M. (2015). Marilyn Anne Ray's theory of bureaucratic caring. In M. Smith & M. Parker (Eds.), *Nursing theories and nursing practice* (4th ed., pp. 461–482). F. A. Davis Company.

Ray, M., & Turkel, M. (2020). Marilyn Anne Ray's theory of bureaucratic caring. In M. Smith (Ed.), *Nursing theories and nursing practice* (5th ed., pp. 449–467). F. A. Davis Company.

Ray, M., Turkel, M., & Cohn, J. (2011). Relational caring complexity: The study of caring and complexity in healthcare hospital organizations. In A. Davidson, M. Ray, & M. Turkel, (Eds.), *Nursing, caring, and complexity science for human environment wellbeing* (pp. 95–117). Springer Publishing.

Ray, M., Turkel, M., & Marino, F. (2002). The transformative process for nursing in workforce redevelopment. *Nursing Administration Quarterly*, *26*(2), 1–14. https://doi.org/10.1097/00006216-200201000-00003

Roach, M. S. (1984). *Caring: The human mode of being, Implications for nursing*. Perspectives on Caring 1, University of Toronto.

Roach, M. S. (2002). *Caring: The human mode of being: A blueprint for the health professions* (2nd Rev. ed.). CHA Press.

Rogers, M. (1970). *An introduction to the theoretical basis of nursing*. F. A. Davis.

Rogers, M. (1994). Nursing science evolves. In M. Madrid & E. Barrett (Eds.), *Rogers' scientific art of nursing practice* (pp. 3–9). National League for Nursing Press.

Rosa, W., Dossey, B., Koithan, M., Kreitzer, M. J., Manjrekar, P., Meleis, A., Mukamana, D., Ray, M., & Watson, J. (2020). Nursing theory in the quest for the sustainable development goals. *Nursing Science Quarterly*, *33*(2), 178–182. https://doi.org/10.1177/0894318420903495

Rosa, W., Horton-Deutsch, S., Watson, J., Ray, M., Smith, M., Turkel, Gillet, D., & Hernandez-Kertland, G. (Eds.). (2019). *A handbook for caring science: Expanding the paradigm*. Springer Publishing.

Smith, M. (1999). Caring and the science of unitary human beings. *Advances in Nursing Science*, *21*(4), 14–28. https://doi.org/10.1097/00012272-199906000-00006

Smith, M. (2011). Philosophical and theoretical perspectives related to complexity science in nursing. In A. Davidson, M. Ray, & M. Turkel, (Eds.), *Nursing, caring and complexity science: For human environment well-being*. Springer Publishing.

Smith, M. (Ed.). (2020). *Nursing theories and nursing practice* (5th ed.). F. A. Davis.

Smith, M., Turkel, M., & Wolf, Z. (2013). *Caring in nursing classics: An essential resource*. Springer Publishing.

Sullivan-Marx, E. (2020). The epicenter we need: Science. *Nursing Outlook*, *68*(3), 258–260. https://doi.org/10.1016/j.outlook.2020.04.005

Swinderman, T. (2011). Technological change in health care electronic documentation as facilitate by the science of

complexity. In A. Davidson, M. Ray, & M. Turkel (Eds.), *Nursing, caring and complexity science: For human-environment well-being* (pp. 309–319). Springer Publishing.

Tanioka, T., Yasuhara, Y., Osaka, K., Hirokazu, I., & Locsin, R. (2017). *Nursing robots: Robotic technology and human caring for the elderly*. Fukuro Shuppan.

Teilhard de Chardin, P. (1967). *On love and happiness*. The Great Library Collection by R. P. Pyrene. Reprint 2015

Teilhard de Chardin, P. (1969). *Christianity and evolution*. Harcourt.

Thoma, H. (2003). All at the same time: Holistic science. *Resurgence*, *1*(216), 15–17.

Thomas, A. (2018). *Hidden in plain sight: The physics of consciousness*. ADH Thomas.

Trasancos, S. (2014). *Science was born of Christianity*. The Habitation of Chimham Publishing.

Tudge, C. (2003). Set thine house in order. *Resurgence*, *216*, 27–31.

Turkel, M. (2001). Struggling to find a balance: The paradox between caring and economics. *Nursing Administration Quarterly*, *26*(1), 67–82. https://doi.org/10.1097/00006216-200110000-00016

Turkel, M. (2007). Dr. Marilyn Ray's theory of bureaucratic caring. *International Journal for Human Caring*, *11*(4), 57–74. https://doi.org/10.20467/1091-5710.11.4.57

Turkel, M., & Ray, M. (2000). Relational complexity: A theory of the nurse-patient relationship within an economic context. *Nursing Science Quarterly*, *13*(4), 307–313. https://doi.org/10.1177/08943180022107843

Turkel, M., & Ray, M. (2001). Relational complexity: From grounded theory to instrument development and theoretical testing. *Nursing Science Quarterly*, *14*(4), 281–287. https://doi.org/10.1177/08943180122108571

Turkel, M., & Ray, M. (2003). A process model for policy analysis within the context of political caring. *International Journal for Human Caring*, *7*(3), 17–25. https://doi.org/10.20467/1091-5710.7.3.18

Turkel, M., & Ray, M. (2004). Creating a caring practice environment through self-renewal. *Nursing Administration Quarterly*, *28*(4), 249–254. https://doi.org/10.1097/00006216-200410000-00004

van Manen, M. (1994). *Phenomenology of practice: Meaning-giving methods in phenomenological research and writing*. Left Coast Press.

Vaught, C. (1982). *The quest for wholeness*. State University of New York Press.

Von Hildebrand, D. (1965). *The heart: An analysis of human and divine affectivity*. St. Augustine's Press.

Wagner, A. L., & Gaut, D. (2008). *History of the international association for human caring, 1978–2007*. International Association for Human Caring, Inc.

Walker, L. (2020). Gifts of wise women: A reflection on enduring ideas in nursing that transcend time. *Nursing Outlook*, *68*(3), 356–360. https://doi.org/10.1016/j.outlook.2020.01.004

Watson, J. (1979). *Nursing: The philosophy and science of caring*. Little Brown & Company.

Watson, J. (2008). *Nursing: The philosophy and science of caring* (2nd rev. ed.). University Press of Colorado.

Watson, J. (2018). *Unitary caring science*. University Press of Colorado.

Weber, M. (1980). Legitimate authority and bureaucracy. In L. Boone & D. Bowen (Eds.), *The great writings in management and organizational behavior* (pp. 5–21). PennWell Publishing Company.

Weber, R. (1982). The physicist and the mystic-Is a dialogue between them possible? In K. Wilber (Sellon, E. Ed.) (Ed.), *The holographic paradigm and other paradoxes* (pp. 187–214). New Science Library.

Wehbe-Alamah, H., & McFarland, M. (2020). Leininger's ethnonursing research method: Historical retrospective and overview. *Journal of Transcultural Nursing*, *3*(4), 337–349. https://doi.org/10.1177/1043659620912308

Wilber, K. (Ed.). (1982). *The holographic paradigm and other paradoxes*. New Science Library.

Wilkerson, I. (2020). *Caste: The origins of our discontents*. Random House.

Wolf, Z., Bulfin, S., Groebbel, C., Packard, M., Ray, M., & Schoenhofer, S. (2019). Guiding principles for transforming curriculum through integration of technology as expression of caring. *International Journal for Human Caring*, *23*(4), 338–348. https://doi.org/10.20467/1091-5710.23.4.338

Wu, C. J., & Ray, M. (2016). Technological caring for complexities of patients with cardiac disease comorbid with diabetes. *International Journal for Human Caring*, *20*(2), 83–87. https://doi.org/10.20467/1091-5710.20.2.83

Zimmerman, B., Lindberg, C., & Pisek, P. (2008). *Edgeware: Insights from complexity science for healthcare* (2nd ed.). VHA Incorporated.

Disclosure. The author has no relevant financial interest or affiliations with any commercial interests related to the subjects discussed within this article.

Funding. The author has received no specific grant or financial support for the publication of the research, authorship, and/or publication of this article.

Correspondence regarding this article should be directed to Marilyn A. Ray, RN, BSN, MS, MA, PhD, FSfAA, FAAN, FESPCH (hon), FNAP, HSGAHN, Hon. LL. D, Florida Atlantic University, The Christine E. Lynn College of Nursing, Boca Raton, FL 33433. E-mail: mray@health.fau.edu