

Complexity in Practice

“Which Nursing Home Would You Put Your Mother In?” **A Conversation with Complexity Scholars Reuben McDaniel, Jr. and Ruth Anderson**

by

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If you were searching for a nursing home for your aging mother, and wished for her to receive the highest quality of care, what factors will you pay the most attention to in making your selection?

Will it be the nursing home’s mission statement? Or the technical skills of its staff? Or the quality of its physical infrastructure – building, rooms, and equipment? Or the number of recreational options it offers?

You might say, *all* of the above.

However, research tells us that it is *none* of the above.

Research suggests that whether or not your mother will receive high quality care is most dependent on the *quality of the relationships among nursing home staff members*. Quality of care outcomes in a nursing home are dependent on open, free-flowing, and meaningful conversations that occur between and among staff members. If the staff believes that their work and presence matters, that their voices are important and are heard, it usually translates into better care for patients.

The two scholars who have led the charge in studying quality-of-care outcomes in U.S. nursing homes, and who – for over a decade – have questioned the use of conventional management practices to manage health care organizations, are Reuben McDaniel, Jr. of the McCombs School of Business, University of Texas, Austin, and Ruth Anderson of Duke University’s School of Nursing.

Our first stop is the University of Texas in Austin, Texas.

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On a breezy sunny Sunday morning in late-February, 2006, a big yellow airport taxi drops me and my colleague Velvet Miller in front of a large brick building on the campus of the University of Texas at Austin. For a campus that boasts 48,000 students, only a few seem to be up and about. "It's a weekend morning," Velvet reminds me. Sporting a UT track suit and a yellow bandanna, and adjusting her I-Pod's earphones, a young woman jogs past us. A group of four male Chinese students, donning backpacks, overtake us on the sidewalk. As Velvet and I enter the front lobby of the brick building, the façade imposingly announces: The McCombs School of Business.

Past the heavy doors is the dimly lit but expansive lobby of the McCombs School -- the size of a tennis court, I estimate. The high walls, softened by an atrium in the middle, adorn hundreds of embossed plaques, listing the School's philanthropic benefactors, notable alumni, and distinguished endowed professors. The air is imposing, sort of museum-like, and the setting is ostentatiously grand. Did someone say that academia is understated? Not in Texas!

We search for and find the plaque -- in the front wall -- that especially interests us:

Reuben R. McDaniel, Jr.
Charles and Elizabeth Prothro Regents Chair in Health Management
Established 1991

Behind the wall, we hear the thud of an elevator car straining against the pulls of gravity. As its door snaps open, the quiet hum of a battery-powered electric scooter -- a cross between a motorized wheel-chair and a golf-cart -- moves towards us.

A resounding "hi" greets Velvet as the big man -- some 6 foot 8 inches tall -- brings the scooter to a stop. I am next for handshakes with the man whose plaque we admired a minute ago -- Distinguished Professor Reuben R. McDaniel, Jr.



Dr. Reuben McDaniel, Jr.

Reuben and I had met once before in the summer of 2004 in a complexity science and health care quality improvement workshop in Durham, New Hampshire, but the memory of his larger-than-life personality had receded. Standing in the lobby of the McCombs School, I wistfully note that he towered over me – even while sitting on his scooter.

Reuben deftly careens his electric scooter some 180 degrees, and with a wink commands: “Follow me.”

As we ride the elevator up, we ask Reuben how he is coping with his artificial leg [We learned his right foot was amputated five months previously].

“I am still kicking butt with my other foot,” he roars.

Disembarking on the sixth floor, Reuben leads us through an unending maze of corridors to his office: A corner one with big windows.

As Reuben heaves his body on to his office chair, steadying his big frame with a walking stick, Velvet notes: “Nice big office.”

“Yes, I can chip golf balls here,” Reuben chuckles.

When I admire the pictures, the paintings, and the long array of award-winning plaques on the walls, Reuben points to a colorful canvas, noting it is his favorite.

“Why,” I ask.

“The Mountain in this painting reminds me of the important role that a guide plays in rough climb. The guide has a position of responsibility.”

“Where did you get this painting?” I ask.

“A student gave this to me,” Reuben notes softly.

“Your students must like you,” I say.

“I’m not sure they like me,” Reuben grins. “I usually take them down a difficult road and leave them to find their way back.”

Then breaking into loud ringing laughter, Reuben notes: “They better love me for that.”

The laugh, now familiar, moves my pen to write: *“What would it be like to have Reuben McDaniel, Jr., as a mentor?”*

Over the next several hours, munching on Planters peanuts and sipping bottles of Ozarka Spring Water, we are joined on the phone by Dr. Ruth Anderson, Professor of Nursing at Duke University, and one of Reuben’s star mentees. Ruth had attended UT two decades previously.



Dr. Ruth Anderson

Redefining Management Practices in Health Care Organizations

As our conversation unfolds, we more fully grasp the leading role that McDaniel and Anderson have played in reframing scholarship and practice to enhance quality of care outcomes in health care organizations. We grasp that they did so [and continue to do so] by bringing complexity science concepts, practices, and research methods into U.S. healthcare settings.

“What scholarly insights has your collaborative work yielded about managing health care organizations?” I ask.

Ruth’s voice, on a phone-line from Philadelphia, says: “Reuben, do you want to take that question?”

Without battling an eyelid, Reuben says: “Ok, Ruth, let me frame the answer; and you fix it”.

It is clear that Reuben and Ruth instinctively know how to respond to each others’ cues.

“A high quality mentor-mentee [or rather collegial] relationship,” I pen in my notebook.

Reuben loudly mulls over the question and notes:

#1. Management practices can make a difference in enhancing the quality of health care outcomes in organizations.

#2. Management practices that we believe will make the biggest difference in improving the quality of health care usually do not deliver as expected. The drafting of a mission statement, the blowing of the quality horn, or beating up people to demand quality rarely yields the desired results. If anything, such practices are, in the long run, counterproductive.

#3. Management practices based on authoritarian leadership styles rarely result in better outcomes. Quality cannot be imposed on people. Quality outcomes arise when people derive meaning and satisfaction from their work; when they feel valued and recognized for what they do.

#4. Management practices that improve the quality of the relationships in an organization, that change how people relate to one another – such as communication or participation in decision-making – result in better quality of care outcomes.² So management's focus should be on increasing connections and interactions among people. They should focus on building interdependencies and cooperation. They should work to create an environment in which people can feel free to express their opinions without fear of reprisals.

What this essentials means is that *with the same resources – physical, material, and human – the quality of care outcomes in two organizations (nursing homes, for instance) can be profoundly different. An organization where information flows freely in all directions, where people feel connected and valued, will likely yield significantly higher quality of care outcomes for patients.*

So which nursing home would *you* put your mother in?

Friends, Colleagues, and Collaborators

To understand the collaborative intellectual journey of Professors Reuben McDaniel, Jr. and Ruth Anderson, it is useful to gain insights about them as individuals, and also to understand the process through which their relationship has evolved over a period of two decades.

There are many ways to talk about Reuben. If one looks at his vita, one realizes that Reuben was trained as a mechanical engineer and worked with Philco Corporation and Sperry Rand Corporation for a decade before joining the academy in 1965. He arrived at UT Austin as Assistant Professor of Management in the Fall of 1972, some 35 years ago. Modest to the core, Reuben's accomplishments are many – as a scholar, university citizen, and a community member.

Reuben's interest in health organizations began in 1979 when he was acting deputy commissioner for medical programs for the State of Texas. In charge of the State's Medicaid programs, Reuben realized that the biggest expenditure was in nursing home costs. He also knew that in general the quality of care in nursing homes was poor. So Reuben became very interested in how to improve care through better management practices.

Most would agree that Reuben McDaniel, Jr. has done more than any scholar to develop and bring complexity science concepts, practices and research methods into healthcare in the United States. Through a lifetime of writing, teaching, research, and leadership of a complexity and healthcare research network, this widely respected organizational theorist, has demonstrated convincingly that complexity science based management practices improve the care of patients and the performance of healthcare organizations, from primary care practices to hospitals. Reuben also played a key role in the introduction of complexity science into the curriculum in the McCombs School of Business

In 2004, Reuben was awarded one of the highest honors bestowed by The University of Texas at Austin, the Civitas Award, given to a faculty member who has shown exemplary campus citizenship throughout a career of service at the university. Reuben led UT-Austin's charge in recruiting of minority students and faculty, and strongly advocated for investments in women's athletics. As chair of the UT-Austin's Faculty Council, he worked to streamline faculty governance and to ensure excellence in classroom instruction.

Reuben is an active citizen of Austin, having served as the Chair of Chorus Austin and board member of numerous community-based organizations. To many, Reuben is a renaissance man.

"I Had Permission to Learn"

To understand Reuben's ability to think at the systemic level (he eschews reductionist thinking), it may be useful to emphasize his love for learning.

Born in a family which placed a high value on education and learning (his parents were both college professors in Virginia State College), Reuben was, in his own words, "a curious child." As a third grader, he remembered: "I was intrigued by the question – 'Does boiling water freeze?'" The only way to find out was to try it out.

"So one day, before my mother came home, I boiled water on the stove, poured it into ice-trays, and put them in the freezer section of the refrigerator. Then I waited."

When Reuben's mother returned home, she found ice-cream dripping out of the refrigerator bottom. When she opened the refrigerator door, she noticed that the frozen meat had thawed, and small puddles of water were forming.

When his mother queried Reuben if the electricity was off, or if the refrigerator door was left open, he said "no." However, unable to quell his curiosity, Reuben checked the ice-trays, experiencing a Eureka moment. He remembered exclaiming:

"I did it. The boiling water froze."

Reuben's mother instantly realized that her son's experiment had defrosted her refrigerator!

"And, your mother did not scold you? Or punish you?" I asked.

"No," noted Reuben. "I was encouraged to figure things out. The greatest gift my parents gave me was permission to learn."

"And since then you have not stopped learning, Reuben" I reflect.

"I try to renew myself intellectually on an ongoing basis," Reuben notes. "When in high school, I read a book a week, and that habit continued. As a university professor, every three to four years, I like to carry out an in-depth self study of a new discipline, primarily through readings and discussions."

"What disciplines have you self studied?" I ask.

"Over the years, I studied linguistics, political science, history, religion, physics, and some others," Reuben replied.

"Why?" I probe.

Reuben emphasizes: "If you want to understand systems, one needs to study linguistics, for language is a system. To learn about power, one needs to study political science. To learn about ethics, one needs to study religion."

"A love for learning" I muse.

Yes," echoes Reuben. He then emphasizes: "I am not shy of exposing my ideas – even if they are half-baked. So if I write about health care organizations, I seek out opportunities to speak to nursing home administrators, hospital staff, and nurses. I am willing to be challenged and open to authentic feedback. The more the ideas are debated, the clearer they become."

One can see why Reuben McDaniel, Jr. rides the cutting edge of scholarship, questioning the old, forging the new.

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Like her friend, colleague, and mentor Reuben, Ruth Anderson remembers her strong interest in science as a child.

"However my father did not wish the Anderson girls to go to college," she sighed. So, at our local community college, the only way one could study science was to be in the nursing program. My father was okay with that."

"When did you think about becoming a professor of nursing?" I ask.

Ruth notes: "I never thought I would earn higher academic degrees. However, when conducting graduate work, I realized academia was fun. That is, it gave me permission to learn and to be paid for doing so.

Ruth's research – much of it in collaboration with Reuben -- has focused on understanding and improving nursing management practices in order to enhance the quality of patient outcomes. Drawing upon complexity science, organizational and nursing theory, Ruth's work investigates how quality of care outcomes are impacted by (a) communication and decision processes, (b) relationships and interaction between agents, (c) organizational structures, (d) environmental turbulence, (e) resource allocation, and several others. A principal investigator of numerous federally-funded research grants, Ruth is presently engaged in a study titled *Outcomes of Nursing Management Practice in Nursing Homes* in which a multidisciplinary team is exploring relationship patterns and management practices that enable nursing homes to attain high quality patient outcomes.

"How did you first meet Reuben?" I ask Ruth.

Ruth recalls: "We met two decades ago. I was at UT-Austin's School of Nursing pursuing the Nursing Services Administration Track with a Minor in Business Management. I needed a committee member outside of my School, and had heard about Reuben's interest in organizational aspects of health care practices. Those were not the days of e-mail, so I called Professor McDaniel with some trepidation, and left the first chapter of my dissertation in his mailbox. Then I scheduled a half-an-hour meeting with him."

"How did the meeting go?" I ask?

Ruth exclaimed: "It lasted three hours." Then added: I met Reuben in his previous office which was quite small; so he looked very big. He was very challenging. He asked a lot of questions. Many were unanswerable. I had to be very quick on my feet. It was very hard to win an argument with him."

As an afterthought, Ruth added: "I won my first argument with him after knowing him for three years. Reuben has an uncanny ability to think in unconventional ways. That has been his greatest gift to me."

"Reuben, how do you remember Ruth in your first meeting?" I ask.

Reuben emphasized: "She was smart. She was pretty. She rose to the challenge. I knew this woman would go places, and I could ride with her to success."



Reuben and Ruth in 1987 after her Dissertation Defense

Complexity Science and Health Care Management³

Starting in the early 1990s, Reuben and Ruth (and a few other organizational science and leadership scholars) led an intellectual movement advocating the adoption of a complexity science perspective to understand health care organizations, including the workings of hospitals, nursing homes, and other care facilities⁴. Complexity ideas especially resonated with scholars, administrators, clinicians, and nurses who were becoming increasingly frustrated with the mechanistic paradigm of understanding organizations, grounded in linear cause and effect reasoning: If X causes Y, then knowing X allows one to predict Y, and controlling X allows one to control Y. Such thinking, steeped in notions of predictability and control, views organizations as machines⁵.

"What's wrong with the machine-metaphor of organizations?" I ask.

Reuben chuckles and explains: "If one looks at an organization as a machine, then the 'engineer' in us would look at every part as being designed to perform a specific function -- without deviation or variation. In health care organizations this means that precise actions have to be performed by doctors, nurses, and administrators *on* patients, without variation, to obtain desired outcomes. However, unlike parts of a machine that can be programmed, it is difficult to design, specify, and mandate human beings to perform certain behaviors. In essence, the presence of human beings renders clinical and other outcomes as unpredictable, emergent, and often uncontrollable."

I ask: "Reuben, can you give an example of how the 'free will' of a human being leads to unpredictable or uncontrollable outcomes?"

Reuben answers: "Consider the case of hand hygiene in hospital settings. Doctors and nurses know the importance of washing their hands both before and after attending to a patient. However, they cannot be programmed to do so. In fact, the rates of hand hygiene compliance in U.S. hospitals are dismal."

"And, the worst offenders are doctors," I chime in.

While a Miles Davis CD streams through the Panasonic speakers in Reuben's office, our conversation flows in many directions.

"Reuben, why is complexity science especially useful to understand the functioning of health care organizations?" I ask.

Reuben explains that after decades of laboring with rational approaches to understanding organizations, organizational scientists have increasingly realized that inconsistencies exist between theoretical descriptions of organizations and what participants in those organizations experience. So the compelling question for him was: *how do we manage organizations realizing that they represent complex adaptive systems?*

"What are complex adaptive systems?" I ask.

Effortlessly, Ruth took over from Reuben, first explaining that *complexity science* is the study of systems that are characterized by diverse interacting agents and display dynamic, non-linear, and emergent properties. A type of system studied in complexity science is Complex Adaptive Systems (CAS). In particular, health care organizations represent CAS given they are characterized by multiple diverse agents -- clinicians, nurses, administrators, insurance companies, and patients -- who interact in dynamic ways.

Reuben adds: "Health care organizations are also characterized by a high degree of information asymmetry -- for instance, between the physicians and patients -- and that creates unusual interdependencies in the system. Further, in health care contexts, the link between service recipients (patients) and payers (insurance companies) is a weak one, leading to uncertainty and distortion in predicting a system's response."

As our conversation unfolds both Reuben and Ruth emphasize, repeatedly, that *the essence of a CAS is captured in the quality of the relationships among agents, rather than in the agents themselves.*

"Ruth, could you explain what that means with an example?" I ask.

Ruth obliges: "When speaking of a well functioning surgical team, one recognizes that the quality of the relationship between the surgeon, the surgical interns, the nurses, the anesthesiologists, and the respiratory therapist is what leads to a successful surgery, not just the dexterity of the surgeon's scalpel. Similarly, to assess the quality of care in a nursing home, it is

necessary to consider system-level factors rather than singling out the one outstanding nurse who, on Unit 7 East, takes care of patients with Alzheimer's disease.⁶

Reuben and Ruth also emphasize that the relationships among the interacting agents in a CAS are non-linear: that is, inputs are not proportional to outputs. Small changes can lead to big effects (also known as the "butterfly effect") and big changes can lead to small or no effects. A CAS is full of feedback loops, both positive and negative. Every action has a feedback loop connected with it which influences the actor or something else. The Hunterdon Medical Center in Flemington, New Jersey, is a case in point.

Hunterdon Medical Center: A Site of Rich Interactions

Complexity theorists value the wisdom embodied in what is known as "the butterfly effect," a term coined by MIT professor Edward Lorenz in 1972. Lorenz asked the question "Does the flap of a butterfly's wings in Brazil set off a tornado in Texas?" The principle here is that small changes in input conditions, when sustained over time, can often cause cascading huge effects. Also, in complex, adaptive, non-linear social systems, there are usually no independent or dependent variables. All variables are independent and dependent. So, how might one find the few small changes that might have large effects?

The Hunterdon Medical Center in Flemington, New Jersey,⁷ a not-for-profit 176 bed health care facility, is a model for patient and community-centered care, and has consistently topped the charts for patient satisfaction with nursing care. At Hunterdon, you are not a patient in Room 41, but Mrs. Wang, who manages the Chinese restaurant on Main Street, whose son Jason was the senior valedictorian the previous year.

How has Hunterdon achieved its well-deserved reputation? Linda Rusch, Hunterdon's Vice President for Patient Care, encourages her staff to make small positive changes in whatever they do⁸. To Rusch, small changes act like drops falling on a still pond, creating a ripple effect; or, they can act as a grain of sand that falls on a sandpile, causing large avalanches of sand. An "insignificant" thing can build over time leading to big results (akin to a variety of bamboo that does not sprout for five years, but in the sixth year grows 80 feet).

Like most complex adaptive systems, Hunterdon is a site of rich interactions among its agents, fostering connections, cultivating relationships, and undergoing spontaneous self-organization – the process by which people mutually adjust their behaviors in ways needed to cope with changing internal and external demands⁹.

Dubunking the aggressive, competitive, male testosterone model of care, Hunterdon instead emphasizes sensitivity, compassion, and expression – the "feminine" side of health care. The primary energy of the system is channeled into cultivating positive interactions. Rusch labels her style of leadership as a relationship "cultivator" – one who cultivates an environment where people want to come and work. She also sees herself as a "weaver" – who can work like a spider – ceaselessly spinning new tendrils of connection, while continually strengthening ones that exist.¹⁰

At Hunterdon, nurses experience what it is like to be a patient. To build empathy, they are put on wheel chairs, rolling beds, and in restraining harnesses. Hunterdon's culture encourages nurses to work outside the hospital. Nurses hold community blood pressure screenings, cholesterol checks, and health fairs. They work with police and car dealerships to teach young parents how to buckle children in car seats.

These small initiatives, geared toward enhancing the quality of interactions between nurses and patients and between the hospital and its community partners, cascade through the Hunterdon system, replicating themselves and leading to big changes.

Improving Quality of Outcomes in Nursing Homes¹¹

Ruth and Reuben along with other collaborators have conducted various pioneering studies on improving the quality of care outcomes in nursing homes. Why focus on nursing homes?

On any given day, some 1.5 million Americans receive care in one of the nation's 16,400 nursing homes.¹² In 2006, nursing home care in the U.S. cost upward of \$130 billion, which amounts to an average of \$87,000 per patient per annum (or a whopping \$240 per patient per day). The cash-strapped Medicaid and Medicare systems are the largest purchaser of nursing home services, covering the costs of more than two-thirds of patients.

Nursing homes face a variety of interrelated challenges, including authoritarian top-down structures, chronic staff turnover (in some cases, as high as 200 percent each year), and under-prepared Certified Nursing Assistants (CNAs), to name a few.

"Why is there such a high turnover among nurses?" I ask Ruth.

"The nursing staff leaves as they do not feel that they have the support they need to take care of their patients. They often feel that nurse managers are so busy with staffing and scheduling issues that they have little time to hear their concerns."

"This must mean that new nurses are trained continually," I muse. "But aren't there nursing homes, where staff turnover is not so high?" I ask.

Ruth responds: "Turnover is lower at nursing homes with stable nursing leadership¹³. The longer the tenure of the director of nursing, the more stable the nurses perceived their work environment to be. Our study of 164 nursing homes in Texas found that for each year the director of nursing remained in her position, turnover of registered nurses (RNs) decreased by 16 percent. A significant factor in reducing turnover among certified nursing assistants (CNAs) was the amount of time they were allowed to spend with patients. If they don't have that extra minute to spend with the patients, they're always rushing in and out of the room, and feel that they might be cheating the patient."

Certified nursing aides (CNAs) play a key role in determining the quality of health care in nursing homes. "That's where the rubber meets the road," notes Ruth.¹⁴ Amazingly, CNAs provide 80 percent of all direct patient care; only seven percent of the staff in nursing homes comprises of registered nurses. In spite of vast care-giving role, CNA certification training as per federal guidelines is for only 75 hours – less than two weeks.

Without adequate training, CNAs usually follow one of two mental models in dealing with patients. Reuben elaborates:

"First, they may treat the elderly as mothers would treat children. This mental model, on one hand, allows them to be patient with the elderly, helping them to stay in control when facing "unreasonably" demanding residents. On the other hand, this perspective makes the CNAs view the residents as "crybabies" and to assess their behaviors as "tantrums" – to be managed with "time outs". Believing that the difficult situation was handled appropriately, CNAs may not feel the need to discuss the patients' situation with the registered nurse. So, in spite of the best intentions, such infantilization of the elderly allows conditions such as depression or pain to often go undiagnosed.¹⁵

Ruth chimes in: "So if more conversations occurred between CNAs and RNs, better care options for residents are likely to emerge."

"What is the other mental model that CNAs commonly use?" I ask.

Ruth elaborates: "CNAs commonly treat the residents using the Golden Rule – 'Treat people the way you would like to be treated.' This mental model is also problematic given the physical, emotional, and psychological needs of the elderly are different from that of CNAs."

Choice of Method

When asked about the choice of method for carrying out complexity-inspired studies, both Ruth and Reuben proudly discussed their piece (co-authored with colleagues) that brought together the case study method and complexity science to suggest new ways to study health care organizations.

In this article, they argue that case study represents an ideal method for studying systems as it provides an opportunity to look at the patterns of relationships and interactions among the system's agents,¹⁶ and provides a richer and more complete understanding of health care organizations. Further, case study methods – such as participant observation and interviews -- are well suited to the study of the informal organization over time.

Implications for Nursing Curricula

“So, Ruth, what implications does your nursing home research have for nursing curricula and training?” I ask.

“More attention needs to be paid to the training of CNAs, making them aware about the fallacies of the mental models they use. Further RNs, in their training, need to understand where the CNAs are coming from, and find opportunities for more interactions with them through case conferences. In nursing homes, the role of a RN needs to be reframed and redefined: from being a manager of CNAs (tied up with staffing and scheduling issues) to being the listening resource person and, as warranted, the clinical expert.”

Reuben elaborates further: “The management culture in most nursing homes is top-down and authoritarian. Rules have to be followed in this highly regulated industry. Minor violations can lead to major fines and punitive action, including the closing down of such facilities.”

Ruth adds: “Our research indicates that local patterns of interaction determine quality of care in nursing homes far more than top down directives from the CEO. Floor-based quality outcomes – e.g. has the bed been made, have the medications been administered in a timely manner, is the coffee cup in the sink or in the dishwasher – are more based on the quality of the relationships than on organizational policies and guidelines. Performance is better when people feel valued.”

“So what implications does your research hold for those managing complex organizations such as nursing homes?” I ask.

Reuben responds: “Good nursing, good patient care cannot be reduced to technique. It comes from meaningful relationships that give people the feeling of being fully involved, engaged. When health care administrators shift their focus from directing and controlling to building relationships, the staff feels that they are capable collaborators, not objects to be manipulated.”¹⁷

Ruth and Reuben’s study of 164 nursing homes in the State of Texas demonstrated that complexity-inspired management practices that increase communication flows and interaction between and among staff members and patients, led to better resident outcomes: less aggressive behavior, less use of restraints, less complications of immobility, and reduced injuries and fractures. Further, such management practices led to high morale among care givers and higher levels of resident satisfaction¹⁸.

I pose a follow-up question: “So complexity science offers a useful framework to understand how health care organizations (such as nursing homes) work, but might you suggest ways in which it becomes useful as a framework of intervention?”

Reuben responds: “A complexity view suggests that a few simple rules may be used to guide system-level changes. It suggests that strategies for better outcomes go beyond the technical skills of care providers. Management’s focus should be on building relationships, interdependencies, and cooperation. Management strategies that increase connections and interactions among people and consciously invite diversity of opinions and approaches are likely to

yield better outcomes." After a pause, Reuben adds: "However, most care givers and administrators are not trained to carry out such actions."

"Their training deals more with 'technicality' and less with 'humanity,' I chime in.

Ruth continues: "Fostering openness in communication is important. That is, people in the organization should feel that they can speak clearly and directly without fear of reprisals or fear of being misunderstood. When such happens, trust is high, ideas flow freely, and the solution space is expanded. Supervisors need to mindfully acknowledge and appreciate staff performance, genuinely consider staff opinions, and maintain a respectful relationship with them. Feedback should be authentic, accurate, and immediate, and couched constructively."

While chewing on Ruth's comments, I realize that *the quality of interactions do not just determine the quality of outcomes in hospitals or nursing homes, but are valid for other educational, non-profit, and corporate settings.*

Whether in a Classroom or a Corporation

I asked Reuben what his classrooms are like. Specifically, what does he "do to foster trust, promote interactions, and create connections?"

Reuben smiles: "In my classes, there is a topic, there are readings, but there is no preset sequence of activities. Students talk to each other, drawing upon the readings and their experiences. I rarely lecture. They pay tuition to learn, not to hear me talk. I do not use PowerPoint. I discourage note-taking but encourage engagement in the 'here and the now.' My role in class is one of facilitator; I provide feedback, summations, and provocations. One rule is 'that you cannot ask a question, for which you don't already know the answer.' It is important that they take responsibility for asking and engaging with the question, and not believe that the teacher has all the answers."

Reuben's description about how he conducts class at the McCombs School at UT Austin resonated strongly with the complexity-inspired approaches that I (the present author) have adopted to increase connections, conversations, and interactions in my classroom at the Scripps College of Communication at Ohio University. My classes invariably begin by disrupting the geography of the classroom: chairs and tables arranged in rows are put in a circle so everyone can see each other. I rarely stand up and lecture "looking down" at the students; we all sit and conduct ourselves as both teachers and learners. Often a question or a dilemma generated out of the class discussion is posed to self-organizing dyads, triads, or quads (groups of four), leading to several simultaneous conversations. As a follow-up to such an exercise, we look for response patterns, dissensions, and affirmations. The class agenda evolves and is fluid -- being influenced by each of us in our interactions with others. We do not feel compelled to resolve every question that is posed or tie up our reflections in a neat bow: it is okay to be certain and uncertain about a position at the same time, it is okay to not make up one's mind, it is okay to hear others' positions even if it does not coincide with ours, and so on.

An overwhelming sentiment (as per the student evaluations) in response to such classes is the high degree to which the participants feel involved in, and engaged with, the topic and their classmates, both in and out of the class. A year or two after taking the class, it is not unusual for a participant to flag me on campus to say "I'm still in touch with *this* and *that* classmate, and how that class led to *this* or *that* collaboration."

The same principles that guide quality of care outcomes in nursing homes, and which influence the conduct of Reuben's classroom at UT Austin and mine at Ohio University, also hold value in corporate settings. About a year ago, I wrote a case on Henri Lipmanowicz, former President of Merck Intercontinental Region (MIR) and Japan, responsible for Merck's operations in over 160 countries, arguing how his complexity inspired practices of "building trust" and increasing communication flows contributed to the quality of outcomes – both material and relational – in a corporate setting¹⁹.

What management lessons did Henri distill from his highly successful corporate career?

"People don't like to be treated like cattle or robots. They don't like being beaten, physically or otherwise, and they don't like being exploited. They want to be listened to. People appreciate honesty and trust, and what gets organized around honesty and trust is what's important. So, foremost, a good manager works for the people who report to him/her, developing quality relationships."

Amen!

In Conclusion

In sum, research conducted by Ruth, Reuben, and their colleagues suggest that nursing homes with good communication, trained and adequate staff, a merit-based work environment, and relationship-centered management demonstrate better quality of care outcomes. Management practices need to balance between too much and too little structure – so that innovation, learning, and experimentation can be fostered. Flattened hierarchies, low levels of formalization, and more open and free flowing conversations yield better clinical and financial outcomes.

As our conversation begins to wind down, I ask Ruth: "How do you incorporate complexity science in your research projects?"

She replies: "My research team is interdisciplinary. It includes a physician, a geriatrician, a gerontologist, an organizational change scholar, a nurse clinician, RNs, and social workers. My staff includes staff members from Duke and outside Duke. Diversity of perspectives is highly valued. We meet once a week for three hours. There is no pre-set agenda; it is set as the meeting unfolds. We do not run tightly controlled experiments and report results. So the writing protocols are not pre-determined and are shaped through iterative discussions. Further, our research team is divided into self-organized sub-teams which meet separately."

Reuben adds: "Ruth has been working with the same group of folks like me, and new ones as warranted, over the years. So, we have taken time to learn together, support each other, and challenge each other without inhibition or fear. This results in improved and often surprising outcomes."

"Improved and surprising outcomes, indeed," I record in my notebook as I reflect on this amazing, collaborative intellectual journey of Reuben McDaniel, Jr. and Ruth Anderson.

Thank you Reuben and Ruth!

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Endnotes

¹ Arvind Singhal is presently Professor in the School of Communication Studies, Ohio University, and from Fall, 2007 will be the Samuel Shirley and Edna Holt Marston Professor of Communication, and Senior Research Fellow, Sam Donaldson Center for Communication Studies, University of Texas, El Paso. Singhal teaches and conducts research on the role of communication in organizing for social change and in health promotion. He is author or editor of several books, including *Communication of Innovations* (Sage, 2006); *Organizing for Social Change: A Dialectic Journey of Theory and Practice* (Sage, 2006), *Combating AIDS: Communication Strategies in Action* (Sage, 2003), *The Children of Africa Confront AIDS* (Ohio University Press, 2003), and *Entertainment-Education: A Communication Strategy for Social Change* (Lawrence Erlbaum, 1999). In recent years, Arvind has become a keen student of complexity science, and serves on a voluntary basis on the Science Advisory Board of the Plexus Institute in Allentown, New Jersey, in which both Reuben McDaniel, Jr. and Ruth Anderson are active participants.

In the past two years, Arvind met with Reuben McDaniel, Jr. twice, including an all-day visit to his office at the UT-Austin campus in late-February, 2006 for an in-depth personal interview. Plexus Institute Senior Vice-President, Velvet Miller, accompanied Arvind to Austin, making valuable contributions to our conversation. While we visited with Reuben in his office, Ruth Anderson joined us on a telephone conference call of several hours, allowing for an interactive dialogue between all the participants.

The creation of this story followed certain complexity-inspired processes: it was dialogically co-constructed with Reuben and Ruth and their various colleagues over several iterations. Curt Lindberg commented on a draft version of this story, as did Robert Lindberg, M.D. This story owes a special debt of gratitude to Henri Lipmanowicz, Chairman of the Plexus Institute Board, who read a previous version multiple times, and provided various ideas to reorganize and sharpen it, even while vacationing in France. Thank you, Henri.

² See Anderson, Issel, and McDaniel, Jr. (2003).

³ See McDaniel, Jr. and Driebe (2001) for more on complexity science and health care management.

⁴ Anderson and McDaniel, Jr. (1992, 1999, 2000) and Zimmerman, Lindberg, and Plsek, (1998).

⁵ Suchman (in press).

⁶ See Edmondson (1996).

⁷ A story from Linda Rusch, written by Birute Regine, and available from <http://www.plexusinstitute.com/services/stories/show.cfm?id=14>. Also see Zimmerman, Lindberg, and Plsek (1998).

⁸ See Zimmerman, Lindberg, and Plsek (1998).

⁹ See Cilliers (1998).

¹⁰ McDaniel, Jr. and Driebe (2001)

¹¹ See

<http://www.kinston.com/SiteProcessor.cfm?Template=/GlobalTemplates/Details.cfm&StoryID=21751&Section=Society>

¹² In a year, more than three million people, mostly the elderly, receive nursing-home care. See New York Times article accessed on April 22, 2007:
<http://www.nytimes.com/2007/04/22/health/22nursing.html?th=&adxnnl=1&emc=th&adxnnlx=1177246880-hBd4BDWJK1TZqs9ehGDluA>

¹³See Anderson, Corazzini, and McDaniel Jr. (2004).

¹⁴ Anderson et al. (2005).

¹⁵ Anderson et al. (2005)

¹⁶ Anderson, Crabtree, Steele, and McDaniel, Jr. (2005).

¹⁷ Suchman, Williamson, and Sluyter (in press).

¹⁸ See Anderson, Corazzini, and McDaniel, Jr. (2004) and Anderson, Issel, and McDaniel, Jr. (2003).

¹⁹ Henri's case can be accessed at
<http://www.plexusinstitute.org/services/stories/show.cfm?id=36>