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WHY SO UNCERTAIN?

It is the bottom of the ninth; the game clock ticks to zero; the goalie has a weak knee; the star forward has five fouls; and the soprano just missed her cue. It is your move; you have the puck. What do you do? What game are you playing and how can you win? This may sound like the punch line of a nightmare, but for many of us it feels more like Tuesday at the office. We often find ourselves in unfamiliar territory, working toward shifting goals, with colleagues who seem to be from another universe. Today, it is sometimes hard to tell who works for whom. Relationships are shaped by inconsistent and often confusing cultural, social, emotional, and business practices. We are never quite sure what to expect or how (and by whom) our success would be judged. It is increasingly difficult to make sense of complex and uncertain patterns in organizations. There are questions about goals, rules, equipment, and skills that separate winners from losers. Relationships that might have held over the long haul are challenged by changing expectations and loyalties. Careers do not follow predictable, predetermined patterns. Economic indicators are confusing even to the experts. All of us have trouble making sense of the game we are playing and figuring out what we have to do to win.

The Infinite Game

What rules prove to be constant in your day-to-day experience at work and at home? If you are anything like our clients or like us, you live and work in an environment where new rules are written and old ones are broken every day. James Carse[1] saw the emerging complexity of the world back in the 1980s. He wrote a lovely little book called *Finite and Infinite Games* to distinguish predictable, closed-system games from the ones that were open and unpredictable. Traditionally, finite games have shaped our experience and our success.

In a finite game, it is easy to make sense. Everyone agrees on the goal; the rules are known; and the field of play has clear boundaries. Baseball, football, and bridge are examples of finite games. At one time in the not-so-distant past, we expected careers, marriages, parenthood, education, and citizenship to be finite games. When everyone agrees on the rules, and the consequences of our actions are undeniable, responsible people plan for what they want, take steps to achieve it, and enjoy the fruits of their labor. We know what it takes to make sense in a finite game.

Most of us realize that we are playing a very different game. We are playing an infinite game in which the boundaries are unclear or nonexistent, the scorecard is hidden, and the goal is not to win but to keep the game in play. There are still rules, but the rules can change without notice. There are still plans and playbooks, but many games are going on at the same time, and the winning plans can seem contradictory. There are still partners and opponents, but it is hard to know who is who, and besides that, the "who is who" changes unexpectedly.

Every day, the newspaper is full of examples of unexpected and sometimes unknowable developments. The mortgage market tanks, an Interstate bridge across the Mississippi River collapses, youth in London turn into lawless mobs, earthquakes hit Washington, D.C., and a tsunami devastates Japan.

In such complex and unpredictable environments, important factors that shape the future are unknowable. Social, economic, climactic, and political changes erupt without warning. We can plan, but we expect our plans to go awry. We can work toward our goals, but we understand that our work may be in vain. We experience unintended consequences that too often punish what should be rewarded and reward what should be punished. We need new ways to make sense in complex organizations. As individuals and organizations, we need the capacity to adapt to the unexpected. We need adaptive action.

Every day, forces we do not control reshape the landscapes of life in the twenty-first century. Not only are the rules of the game of life changing, but the game itself is being transformed. Not only are we playing a different game, but we are called on to play many games at the same time. Not only are we playing many games, no one knows who will get prizes in the end, and for what. It's your move. Life is uncertain. What do you do?

Economic foundations sit on quicksand of derived values and float on bubbles of speculation. Would it be possible to see, understand, and respond

to economic turmoil in ways that reduced risk and increase value for us and our organizations?

Cultural and national loyalties shift too quickly or lock in too tightly for civil stability to be sustained. Might we see early signals of dissatisfaction so we could understand and influence the public discourse toward peaceful and productive dialogue?

Technology moves from imagination to reality to obsolescence at breathtaking speed. Can we consumers, producers, suppliers, and service providers develop the capacity to keep up with the pace of technical change?

 Massive, ubiquitous, and direct communications contribute to both intractable stability and incomprehensible disruption. Can we read the landscape and establish media and messages that support the patterns we choose to reinforce?

Local climactic conditions change more quickly and more unpredictably than farmers, multinational corporations, or emergency services can manage to respond to. Can we collect data from around the world, consider it rationally and openly, and take collective action for the good of people and the planet?

These are the kinds of questions that shape our ability to thrive—perhaps even to survive—in the uncertain world of the future. As individuals, we face similar challenges in personal development, home, and health. As community members, such challenges appear in threats of violence and opportunities for collaborative action. At work, our abilities to manage planning, marketing, human resources, and supply chains all depend on the ability to see, understand, and influence emerging change in complex environments.

We don't think these problems are beyond human intervention. We believe that humans can make sense of patterns in a fast-changing environment and build the adaptive capacity they need to thrive in such volatile uncertainty.

We are living and working in a world—indeed in multiple worlds—that are changing before our very eyes. This massive disruption is no secret. Every scholarly and practical discipline has tried to describe how these fundamental changes affect decision making and action. In our work, we engage with people from many sectors: educators, public health professionals, politicians, bureaucrats, military strategists, leaders, health care professionals, technology gurus, industry giants, mechanical engineers, entrepreneurs, product developers, middle managers, academic researchers, funders, and grantees.

The particular challenges faced by each of these people are unique. They work with different resources, conceptual and practical tools, places and times, and shares of the power picture. Still, they have one thing in common: they and their organizations all get stuck trying to deal with uncertainty. They struggle to understand and adapt to the ever-changing rules of the game.

Our research and practice, our personal and professional lives point to Adaptive Action as a path through these uncharted territories.

Our Infinite Journey

We are sisters, Royce Jan Holladay and Glenda Kay Holladay Eoyang, so our shared journey and our infinite game started decades ago. Our parents were in the school business in the Texas Panhandle. Daddy coached high school football, Mama directed plays, and both taught whatever was needed in rural classrooms in the High Plains. That environment introduced us to infinite games early in our lives. The flat horizon and sparse vegetation introduced us to unbounded spaces on the ground and in the sky, so we became accustomed to seeing and thinking about the unbounded and far-reaching nature of the "big picture."

As a successful football coach, our father was in high demand and moved his family every year or two from one school to another that was larger, or more committed to the game, or more prosperous, or any combination of the three. We became pretty good at learning the rules of a new community, and playing in ways that always continued the game.

Sitting in the back of the high school auditorium watching play practices, we learned the words and characters of the classics before many of the players did. The theater, and its ability to transcend reality, was part of our daily life. Our parents read, so we read. Our parents talked and wondered, so we did too. Our family tradition in the United Methodist Church instilled in us a love of singing, a taste for reasoned argument, and a commitment to the common good. Before we knew anything else, we lived an infinite game.

In late adolescence our paths parted for a time. Royce moved toward the study of education, teaching, and school administration. Glenda studied history and philosophy of science and practiced technical training and entrepreneurship. Royce's path took her to North Carolina, Washington State, and New York City. Glenda's led to New Mexico, Oklahoma, and Minnesota. Holidays always brought us together with family to celebrate and reminisce, but in

the late 1980s something else drew us together. It was a powerful idea, and it has unfolded over time into the work that generates this book.

Our shared inquiry began over holidays, after we would put the husbands and kids to bed. Leslie (a third sister and literacy professor, researcher, and scholar) would join us as we all shared what we had learned from our eclectic reading and diverse practice. The fourth Holladay daughter, JoTisa, spent her energy those days with her own young daughters and has joined our inquiries in recent years. Our questions in those early years ranged far and wide. What lies between positivism and postmodernism? How does one stand in inquiry while taking action? What does it mean to know, in the realm of the unknowable? How can an individual's actions both influence and be influenced by the actions of a group? What might a theory look like that matched our practice as master teachers and leaders? What mediates between total randomness and complete control? What are the conditions that influence the path, speed, and results of self-organizing processes? How can we see in ways that are powerful, explain in ways that are compelling, and act with courage and creativity? How can we make sense of uncertainty in organizations? What is Adaptive Action?

In all its various incarnations, the idea at the heart of those conversations was about how to thrive in environments that demand action in spite of uncertainty. The question was how to work in local contexts and shape systemic change. The challenge was to work ethically and responsibly in circumstances where outcomes were unknowable. The driving desire was to play the infinite game and help others do the same thing.

By the time the idea found us, it had numerous and remarkably diverse roots. The door was opened for us by James Gleick and his *Chaos: Making a New Science.*[2] He introduced the sciences and the scientists of a natural world shaped by unpredictability and complexity. Behind the door we found an emerging interdisciplinary tradition that was developing new theory and method at the edge of the knowable. Over the decades, various parts of this field have emerged under many names, including chaos theory, nonlinear dynamics, and complexity science. Around the world, people have found ways to codify and explain this world at the edge of traditional sciences and mathematics. Ilya Prigogine[3], Stuart Kauffman[4], John Holland,[5] Per Bak,[6] Murray Gell-Mann,[7] Ian Stewart,[8] and Jack Cohen[9] were all writers who influenced our early thinking and writing. Management theorists through the years have absorbed complexity ideas into practical applications. Ralph Stacey,[10] Kevin

Dooley,[11] Jeff Goldstein,[12] Dave Snowden,[13] Brenda Zimmerman,[14] and Margaret Wheatley[15] have seen leadership and management through a complexity lens and shared their perspectives with others. Our work has benefited from their explorations and from rich dialogue among us as all our work evolved.

From a slightly different perspective, our thought and practice have been influenced by the historical conversation around systems theory. In complex environments, in infinite games, there is no stable, permanent, reliable boundary to define reality. The only way to think about the world is to think about systems—parts in relationship, forming wholes. Ludwig Von Bertalanffy[16] opened the world of general systems theory, and people such as Werner Ulrich,[17] Gerald Midgley,[18] Paulo Freire,[19] and Jürgen Habermas[20] moved the conversation into meaning making and action in human systems. Peter Senge[21] has led a movement to take systems thinking into action. Bob Williams[22] applied a variety of systems approaches to program evaluation. All of these have been part of our ongoing inquiry and conversation.

A third thread in our emerging tapestry has been research and practice in the field of cognition and education. We learned very early that learning quickly and well was an essential success strategy. As we became conscious of our commitment to adaptation and to Adaptive Action, we relied heavily on those who framed educational theory and practice. Our conversations integrated Glenda's work in history and philosophy of science, Royce's in educational reform, Leslie's in literacy and teacher research. A question would arise in one and be addressed in another throughout the years of our shared inquiry.

Practical application and emerging praxis also informed our work. At the same time we were exploring theories from various sources, we continued to develop in our professions. Each of us, in our own way, engaged with people every day. We influenced and were influenced by people who stood on the front lines of Adaptive Action. In our various roles, we engaged with leaders in industry and government, educational professionals, community members, researchers and academics, philanthropists, entrepreneurs, and front-line supervisors. In all of those contexts, we saw people who faced unpredictable complexity and uncertainty, who made meaning of what they saw, and who took action to influence the emergent patterns around them. We drew insights from them every day. In them we also saw the urgency of our efforts to improve the theory and practice of adaptive capacity. Many were adapting well, but unconsciously. Others were failing in their attempts at adaptation. All were frustrated and sometimes frightened by their inability to make sense

of what they saw and the inevitable demand for adaptation that often overwhelmed the ability to imagine it.

This book is written for them and for you, if you find yourself stuck in the same struggle. In human systems dynamics (HSD) we have integrated the learning from across our diverse theories and practices. The result is a collection of simple and powerful ways to make sense of uncertainty and overcome the challenges of today's infinite game. We offer models and methods to generate creative options for action in response to unknown and unknowable challenges. And we advocate for action as a way to understand and influence patterns that leave us stuck in times of radical change. We hope to help them and you develop the adaptive capacity to see, understand, and influence change in your own complex human systems.

What Lies Ahead?

The goal of this book is to help you make sense of the uncertainty around you and build adaptive capacity to engage with the self-organizing dynamics of complex adaptive human systems. We know that you face challenges of uncertainty and change today, and we anticipate that those challenges will only increase in the future. Our experience and the experiences of our clients and students have convinced us that what we share here will help you adapt to change as it emerges around you. The models, methods, and concepts in this book will help you see patterns as they emerge in real time. They will help you make sense of what you and others see. They will help you explore options for action and choose wisely in the face of overwhelming uncertainty. At least that is our goal.

Part I, "*What* Causes Uncertainty? *What* Can You Do About It?" states the case for why this book is important in the infinite game required to sustain and thrive in today's complex landscape.

Chapter 1, "Why So Uncertain?" describes the conditions that generate complexity for organizations and explains why and how engaging in an infinite game is the only viable option.

Chapter 2, "What Can You Do?" introduces the Adaptive Action model, describes how it emerged over time, and reveals its usefulness across a wide spectrum of challenges and opportunities.

Chapter 3, "*What?*" explains the importance of tracking data, even in the most volatile environments. It introduces models and methods to help you focus your view in complex change and distinguish the critical patterns from

the insignificant noise in the system. You will learn to ask questions that help you see patterns emerging from messy situations. You will manage the power of multiple perspectives as you explore the Four Truths. You will also see how the three kinds of change—static, dynamic, and dynamical—influence what you should look for in your Adaptive Action cycles.

Chapter 4, "*So What?*" moves into the process of making meaning of signals in complex systems and supporting shared decision making. It reinforces traditional data analysis methods and helps you know when they might still be helpful. It also introduces new ways to think about emergent phenomena and make meaning in the present to inform action in the future. You will move more deeply into our model of conditions for self-organizing and practice using the Landscape Diagram to distinguish the unstable and unpredictable dynamics from those that are stable and relatively predictable.

Chapter 5, "*Now What?*" moves the Adaptive Action process into action, as it provides ways to think and talk about the power of intentional action in self-organizing processes. You will distinguish complexity-based descriptions of superficial systems from the complexity-inspired explanations of the underlying mechanics that drive self-organization. You will explore explanations of complex adaptive systems that reveal rational paths toward effective action, even when you have no way to predict consequences of your actions. You will learn about Brenda Zimmerman's Generative Relationship STAR[23] to help diagnose and take action to improve the performance of teams. You will see how Simple Rules can bring a diverse group of independent agents into coherent action toward shared goals without squelching the identity of any of the players.

Chapter 6, "*Now What?* Again," dwells on ways the simple Adaptive Action process unfolds to adjust to the complexities of real-world applications. You will see how iterations and variations among multiple Adaptive Action cycles link together and work in parallel to build sufficient adaptive capacity to respond to any changing complex adaptive system.

Part II, "*So What* Does Adaptive Action Look Like on the Ground?" introduces a series of stories that show how Adaptive Action can influence, and has influenced patterns of productivity, decision making, and human interaction across a variety of fields.

Chapter 7, "Adaptive Action in Action," shifts Adaptive Action even more deeply into the specifics of life as we tell the stories of nine real Adaptive Action cases from individuals and teams who are HSD Associates. These

practical and entertaining cases will help you see how Adaptive Action shapes effective decision making and action.

Chapter 8, "Capacity Building," focuses on using HSD models and methods to build knowledge and skills in treating Alzheimer's patients (Janice Ryan), in innovative instructional design (Larry Solow and Denise Easton), and in surviving Lean and Six Sigma implementations (Larry Solow and Brenda Fake).

Chapter 9, "Leading Change," applies Adaptive Action to leadership issues, including sustainable school reform (Wendy Gudalewicz), complex change (Kristine Quade), and integrating work and life during transitions (Mallary Tytel).

Chapter 10, "Working as a Social Act," focuses on Adaptive Action connecting work to social change with the power of self-organizing teams (Paul Reeves and Vickie Gray), transcending cultural bias through generative engagement (Mary Nations and Royce Holladay), and Adaptive Action in public policy advocacy (Ilir Zherka).

Part III, "*Now What* Will You Do?" reflects the lessons Adaptive Action offers and points the direction for how it can shape organizational work in the years to come.

Chapter 11, "Gaps Revisited," reintegrates the theory and practice of Adaptive Action in the context of major challenges that face human systems at all levels, including organizations.

Chapter 12, "Lessons for *What?*"; Chapter 13, "Lessons for *So What?*"; and Chapter 14, "Lessons for *Now What?*" draw on lessons we have learned across time and those we continue to learn today about the individual steps of Adaptive Action, as illustrated in and informed by the experiences and reflections shared by Associates in their stories.

Finally, Chapter 15, "Adaptive Innovation," offers a number of ways Adaptive Action has informed our practice in response to sticky issues in leadership and organizational practices. It offers specific insights for how our approach can help you deal with some specific challenges and opportunities found in particular organizational functions. It poses an invitation to you to join us in exploring the possibilities and opportunities of using Adaptive Action in your own work.

Throughout the book, we hope you find ideas that resonate with your own experience in coping with complexity and uncertainty. We also hope you find concepts that shock and disturb you. We hope you will question your own

ways of working against what we have learned and continue to explore. We hope you find the models and methods as powerful as they are simple and that the paradigm shifts are as simple as they are powerful. In short, we hope that you see rich and enlightening patterns in Adaptive Action theory and practice, and that it helps you make sense of your experience in the past, present, and future. And we hope that through the newfound sense you find ways to take courageous and creative action to engage with the systems that are becoming more complex and adaptive every day. In short, we hope it helps you play the infinite game in a way that sustains and enriches the play.