

INTERVIEW WITH JOHN SEELY BROWN

INTERVIEWED BY SETH KAHAN

EDITED BY STEVE DENNING

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Seth: You're a scientist and a manager, John. I understand you are paying a lot of attention to storytelling. Why is that?

JSB: I'm taking storytelling so seriously that I'm now spending part of my time at the new institute for media literacy at USC. I'm particularly interested in digital storytelling, in new ways to use multiple media to tell stories and in the ability of kids, who are now growing up in a digital world, to figure out new ways to tell stories. They have the ability to build interpretive movies very simply and to lay sound tracks around the content. They condition or "sculpture" the context around the content. The serious interplay between context and content is key to what film – and rich media in general – are about. I want to understand what film people know about storytelling. I want to know what makes them such good storytellers. What are the techniques (and grammars) of film that help them create an emotional scaffolding around a story so that it connects first to the gut and then to the head?

Why storytelling? Well, the simplest answer to your question is that stories talk to the gut, while information talks to the mind. You can't talk a person through a change in religion or a change in a basic mental model. There has to be an emotional component in what you are doing. That is to say, you use a connotative component (what the thing means) rather than a denotative component (what it represents). First, you grab them in the gut and then you start to construct (or re-construct) a mental model. If you try to do this in an intellectual or abstract way, you find that it's very hard, if not impossible, to talk somebody into changing their mental models. But if you can get to them emotionally, either through rhetoric or dramatic means (not overly dramatic!), then you can create some scaffolding that effectively allows them to construct a new model for themselves. You provide the scaffolding and they construct something new. It doesn't seem to work if you just try to tell them what to think. They have to internalize it. They have to own it. So the question is: what are the techniques for creating scaffolding that facilitate the rich internalization and re-conceptualization and re-contextualization of their own thinking relative to the experience that you're providing them? Put more simply: how do you get them to live the idea?

Seth: That's similar to your concept of communities. You said: "You can never design a community; you can only nurture a community." It's as though you build the trellis for the plant to climb on.

JSB: Precisely! That's one of the reasons we need to understand this esoteric stuff known as epistemology and social network theory. This stuff starts to pay off when we use it to figure out how we can construct the scaffolding, the trellis, which we want to put in place to support the communication of a new idea and the kinds of nurturing that we need to do. We can use this stuff to help us figure out the physical space, the social space and the informational space. These spaces need have something wonderful about them, so that the idea doesn't appear just once, but becomes something that's lived: it affects the way I see the world.

Seth: I can think of other applications, like helping an institution change its culture. But there's also parenting, and developing citizens.

JSB: Absolutely! In fact one of the reasons I am at USC is to look at broader issues such as, "How do you re-think a culture of learning that might underlie new forms of journalism? How do you create an environment that is conducive to more folks participating in a democracy?" It's the scaffolding that engenders our attention. It's also helpful to understand the new technologies. What is the role of blogs; that is, weblogs? How do they provide a supportive structure? How do they enable us to make sense of what is going on? How do they work? How do they communicate? How effective are they? When do they reach critical mass? And how?

Seth: Are there similarities between blogs and rumors? Blogs mystify me. When I heard of them, I thought, 'Blech! A blog? A serial conversation? What good is that?'

JSB: Blogs are powerful when there's a set of blogs working independently that end up helping you triangulate on the same point. You have different points of view that end up linking to the same mega-idea. If you have three independent rumors that all say the same thing, then that rumor may turn out to have a certain kind of significance. What's interesting is whether we should read blogs in the same way as we read a newspaper.

Notice, also, that blogs can suddenly reach a critical mass that then forces something out into the open, into public consciousness. You might think of it as an analogy to the subconscious vs. the conscious. The formal or conscious part is what today's journalism is about, New York Times and so on. But the informal layer, comprising things like blogs, is like our unconscious mind. It's not publicly visible. But all kinds of things are happening there. Things get linked together and suddenly there can be enough links (creating a dense mesh of intertextual links) that the underlying 'idea' breaks through to public consciousness. The recent Trent Lott situation is an excellent example. Initially, the mainstream press didn't pick up on what he said. It wasn't in the public consciousness. It was the blogs that identified the issue and got the debate going. It was connected at the subconscious level – speaking metaphorically in terms of the social mind. Enough

energy was generated, and then it burst forth into the conscious mind and into the formal media.

Seth: In a big way.

JSB: In a huge way, yes! That's what happens. That's how you get a phase transition from the unconscious to the conscious. That's how you get a phase transition from within the informal social networks to the public recognition and mainstream media. And we know a lot about the mathematics of this. Networks help us understand what leads to phase transitions.

Seth: Can you provide a reference for this?

JSB: Look at *Linked: The New Science of Networks*¹. This “small world” stuff comes from the physicists’ community and the mathematics community. It comes from graph theory. I call it the topological approach. Much of Erdos’ classical work on the theory of random graphs provides the foundation. Then you add the discovery of the kind networks being created in society: social networks and web networks. Nearly all these networks follow what is called “the power law.” It's completely different from the normal distribution – the bell curve – that we all know. It's extraordinary the extent to which all these social phenomena have the same properties and can be described by a power law. It shows us how these networks start to condense, so to speak and then possibly go through a phase transition. A good example is the phenomenon of the rich getting richer, in terms of the growth of rich hubs (and their connections with others). So these communities connect and grow, at times slowly and smoothly, and at times explosively, with sudden shifts. We are just now beginning to understand the dynamics of all this.

Seth: Could you explain your use of the word, “topological.”

JSB: By “topological”, I mean, “what's connected to what.” It's graph theoretic topology. Here are some questions to explore: How do these networks break apart? Are there isolated components in these networks when links are broken or key individuals (who are hubs themselves) leave the network? What happens if you start blindly downsizing a corporation? If you move the wrong people out of the network, then suddenly the network, that was deeply interconnected, starts to fracture. Suddenly there are no linkages, or pathways that connect all the nodes together or connect crucial parts of the network together. Often, this is what's inadvertently happening when we downsize a company or two companies merge. (Seeking ‘synergy’ often destroys real synergy). Understanding the topology of these networks, the different kind of networks and the roles that they play, is critical. If you don't pay attention to this, you can end up destroying the social and knowledge sharing fabrics without realizing it.

¹ *Linked: The New Science of Networks*, Albert-Laszlo Barabasi, Perseus Publishing, 2002

Seth: Inadvertently?

JSB: Well either inadvertently or stupidly.

Seth: You were talking in your presentation just now about the subtleties of storytelling. Could you say more about that?

JSB: What is the structure of a narrative? What makes narratives fit so perfectly in the architecture of the human mind? What are the ways of creating the scaffolding for that narrative? How do you set the context for that narrative? How do you maintain consistency with your core ideas as you set the context? Now there are different media. You can do it orally. You can do it in terms of writing and you can do it in terms of film and video.

Let's take a look at online games, such as Lineage, which are a much larger phenomenon than most people are aware. This particular game holds the record for having the most people online at once, probably hundreds of thousands. It is immensely popular in Korea. Or, in this country, consider Sims Online or EverQuest. If you take into account not only the game itself but also all of the peripheral activities (activities happening around the edge of the game such as the support sites, the chat rooms, and so on) you find a rich social ecology constantly unfolding. But just focus on the game itself which involves all the players building and evolving a complex world, and you see a new kind of nonlinear, multi-authored narrative being constructed.

Yesterday I heard an amazing comment from a 16 year old named Colin. Colin said: "I don't want to study Rome in high school. Hell, I build Rome every day in my on-line game." (Caesar III ²). And in so doing he is continually building a new narrative space that goes on evolving. Of course, we could dismiss this narrative construction as not really being a meaningful learning experience but a bit later he and his dad were engaged in a discussion about the meaningfulness of class distinctions – lower, middle, etc – and his dad stopped and asked him what class actually means to him. Colin responded: "Well, it's how close you are to the Senate." "Where did you learn that, Colin?" he said, "The closer you are physically to the Senate building, the plazas, the gardens, or the Triumphal Arch raises the desirability of the land, makes you upper class and produces plebians. It's based on simple rules of location to physical objects in the games (Caesar III)". Then, he added, "I know that in the real world the answer is more likely how close you are to the senators, themselves - that defines class. But it's kinda the same."

In the past, I tended to think of narratives as being basically linear, but they aren't necessarily. As Steve Denning has pointed out, part of the power of a narrative is

² www.thesimsonline.com: Caesar III is a "SimCity." It takes place in ancient times. Participants must be ready to defend themselves against enemies, bring happiness to the citizens, and please Caesar.

its rhetorical structure which brings listeners into active participation with the narrative, either explicitly or by getting them to pose certain questions to themselves.

In fact, stories have always been a kind of dialectic or conversation between the storyteller and the listeners. Thus the meaning of the literary classics – and the related narrative space – has steadily evolved over time. So the evolution of the narrative space *per se* isn't new. But what is new in the on-line games is the scale and pace of the change. First, there are many more people actively involved in shaping the story – as many as tens of thousands at a time, rather than just a handful with the literary canon. Second, the technology enables the participation to be radically more active than before, not simply the odd comment that might or might not be listened to. Third, the participants are geographically scattered all over the globe, rather than concentrated in one place or country. Fourth, the changes are happening at an incredible pace, that is, in minutes and hours, not in decades or centuries. The dimensions are so different that the evolution of the narrative space becomes something new.

Here's another thing that's curious. Let's look at the exercise that you had us do in the conference just now. You asked us to share a story with someone close at hand. You told us that we'd only have a short time to start the story and then we would have to continue it later in the conference. One thing that we know about the structures of stories is that it's dangerous to stop a story before you're finished. But, you gave us enough time in a social context to start a story; then you said, "Sit down." Now, something interesting starts to happen. I didn't have the time to finish my story. Normally, I won't tell a story if I don't think I can finish it. The way in which you orchestrated things here turned on what makes stories so powerful. What you did was to condition us. You said, "You have 20, 30, 40 seconds to tell a story." So I might do one of a couple things. I might give a synopsis to my partner so I can reach the end of the story. Or, I might decide to just tell you enough of the story that you will come up to me at the break. These are the kinds of things that happen, all subconsciously. But you have to understand the structure of stories to know that.

Seth: That makes me think about the metaphor you introduced in your presentation: the tree and its roots. You said that sharing knowledge was like uprooting a tree and transplanting it somewhere else. You called the tree, the "smallest portable context." A story would be an example of the smallest portable context. You said that the roots of the tree symbolize tacit knowledge, shared practices (social and work practices) and understandings that may not be explicit. In order for the tree to continue to live after it is transplanted, there must be a certain amount of shared practices and tacit understanding. I have a question about "uprooting" the tree. In a sense, the tree is never uprooted because moving it is a continuous process. It's not discrete. You're not jumping from one state to another. You are moving along a continuum.

JSB: The tree is a living process. It will die if you don't replant it, for one thing. And if you plant it in a context that's too different from what it's been accustomed to, it also dies, because the chemistry of that soil works against the way that these roots have been working. But replant it in somewhat similar soil and it will sprout new roots and leaves and continue to live in a transformed way.

Seth: To come back to my storytelling exercise, we've got people pulling their trees out of the ground as they begin to share their stories. Then, I'm saying. - while the trees are dangling in the air: "Okay, sit down now." Some of those trees are going to be planted later and they're going to survive. A lot of those trees are going to die. Some of the trees are going to be transformed by being in the air longer than might be optimal for replanting.

JSB: Right. That plays out fairly simply for stories. But what is more curious is what happens when you see it played out in terms of practices. Science works on replicable knowledge that flows across the entire scientific world. Most of us have thought that scientific knowledge is explicit and can be completely reported on and replicated from those reports. But it's not universally true. Basically what happens is that there are networks of scientific practice, which embody a practice within a certain area of science. The participants share enough of the same 'roots' that they can replicate the knowledge (or experiment). It is their shared roots that enable the knowledge to flow through their network.

The reason why knowledge flows so readily across a community of practice is that the members all share the same roots, not just some. That's what enables a community to work. The reason why we keep trying to replicate an experiment is that we want to make sure that the stuff sitting above the ground is the right stuff and that we have found the minimal root structure required for it to be reliably replicated. Sometimes in an experiment, we engage in practices that are not known to other members of the community or even to ourselves. For example, in a novel and complex biochemical preparation experimenters may be doing things - that they're unaware of in terms of the way they do the experiment - that actually make the experiment work. In science what we're trying to do when we get other communities of practice (albeit, usually from the same network of practice) to replicate an experiment is to find the minimal roots of the new knowledge, so to speak. These are the shared practices that are used in replicating the experiment and supporting the claims by the community that this is (warranted) knowledge and not just an opinion or belief.

Let's look at another very powerful example. Stories are one reason why novels have been so powerful through the ages. Why did we create the canon? A set of classic literary works is the canon for western civilization because these stories constantly get repositioned and re-contextualized but in that process help to extend the culture in a time relevant, situated way. The meaning of the story may morph according to the social practices of the culture at any moment in time even when the story line stays relatively invariant. That is how civilization advances

and why these canons can be so powerful. A canon is a collection of stories. It can be folk tales. It can be biblical stories. It can be the classics. These stories have the capacity to move wonderfully through time. They have enough of a root structure that enables us to uproot them and replant them at a later time in another place.

By contrast, if I give you a fact, you don't have enough of a context to be able to understand what that fact means in a new context or even if it is still meaningful. Why was it uttered? To whom? What else was going on? In today's presentation I described how Cartesian philosophy underlies so much of today's pedagogy. But, what was going on with Descartes when he said something equivalent to, "I think therefore I am"? If you don't understand the religious environment that he was struggling against in that particular moment in time, you won't understand the force of what he was really trying to say, or why he was saying it. It made eminent sense at the time. It doesn't necessarily make the same sense today yet our system of schooling and our notions of pedagogy are still based on it.

By contrast, stories are able to move on. When I tell you stories of the persecution and what was going on at that time, you begin to understand why Descartes had to play it safe.. You understand why he said certain things in certain ways.

Seth: I was a performance storyteller for about fifteen years. I studied myths: King Arthur and Beowulf and the like. When I really got into it, I had this eerie sense that each story was tumbling down through the generations, as opposed to me selecting and then telling it.

JSB: Yes! And as the stories tumble down through us, parts of them are preserved. But sometimes there are very subtle shifts that help us re-embed it in a new time and place. This preserves the authenticity of the story. That's what is so powerful. Culture is passed on orally because (a) we can remember stories, but (b) we can tell stories re-positioned in a different way at a different time in a different culture. We can have one foot in that other culture and be able to tell the story slightly differently in our own culture so that it connects better.

Seth: From your perspective, as someone who often addresses CEOs, as well as managers and practitioners, what are the most exciting applications of storytelling in organizations today?

JSB: What I find so interesting is talking to boards of directors. You've got 30 seconds to capture their attention and three minutes to make your point. You've got to capture their attention and make your point in a way that it sticks with them throughout the rest of the meeting. You want to condition the conversation that unfolds at the board meeting in terms of your story. If you just plunk a fact down, or an assertion, it will get swept away. So the trick is, first of all, how can you capture the audience's attention and, second, how do you communicate something

that will have a life of its own throughout the duration of, at least, the rest of the board meeting, and hopefully later on? How can your story become a scaffolding for their discussion, providing context to their content? I want to see whole points-of-view shifting through my stories.

Seth: I see you planting a trellis. You're throwing a magic seed down that springs into a whole lattice, and you're hoping that their conversations are going to use that lattice.

JSB: Right. When I work with corporate managements, that's what matters almost more than anything else. I want something important to be in place after I leave. That something has to be a seed around which other things start to grow, the tiny crystal around which many things crystallize.

Seth: That sounds very close to what Steve Denning is doing with his springboard stories³. He tells these stories as though he's planting seeds. Then he leaves and he lets the stories do the work. He lets the stories climb the trellises.

JSB: Right! Now exactly how well it really works, we're not really sure yet. We sense that it's working. We see that the traditional approach to communication – bullet points in PowerPoint slides – doesn't work at all in this area. But we haven't yet been able to measure the impact of organizational storytelling in any formal sense. So our intuitions are not analytic. Steve Denning's work isn't analytic. My work isn't exactly analytic. We have a strong sense that we gain more leverage through the storytelling mechanism than many others. Maybe one day we'll figure out a way to measure it.

I am always trying to find new ways to use familiar tools. For example, I'm exploring the use of compound real options theory. It's a financial tool that is much more dynamic than using NPV (net present value) calculations. It's very complicated. It stretches the mathematical abilities of most CFOs. But it's an extraordinarily powerful analytical tool. You can cast a lot of what we are talking about in terms of a compound real option. That is something that brings a different kind of credibility to this discussion. Many of my arguments for radical innovation are now cast in this framework. This buys credibility in the CFO community, which used to say to me things like, "Go put your sandals back on, John, and putter in that magic silicon sandbox called Silicon Valley." (*Laughter*)

There are some ways that you capture attention and other ways that you get credibility. So a story cast in compound real options theory has a certain ecological validity and credibility in the financial community. It sticks with them sometimes a year or two after the fact. Both practices and stories provide the lenses to help us make sense of things.

³ *The Springboard: How Storytelling Ignites Action in Knowledge-Era Organizations*, Stephen Denning, Butterworth-Heinemann, 2000

Now let's take a look at information. It has been defined as the difference that makes a difference. If you follow this, you can think of information as that which causes a ripple in the pond. But, the whole issue of, "What is the pond?" is a devastatingly complicated question. Philosophers haven't been able to answer it. Here is a simple model with clear rules and yet nobody ever really seriously asked, but what's the pond that the ripple is on? When Paul Duguid and I were doing this chapter of our book⁴ we realized how fundamental this question really is. Nobody has ever seriously answered it. Sure, we can formally measure it (i.e., using Shannon's theory) but what really is it?

That is a whole new way into the subject. It's having another look at the subterranean work that goes on in the work environment – the cultural fabrics, the social fabrics and the habits in both social and work practice. Here we have to use our ability to see something new. We have to see the world through a set of distinctions. These distinctions form the lenses that enable us to detect the ripples on the pond. One person's ripples are not necessarily another person's.

Seth: So what one person sees as information is not necessarily what another person sees as information. In fact, people do have very different points of view, different interests and different assumptions.

JSB: All this points to something very interesting about the energy of groups. As they come together, over and over again, different points of view collide. Through that iteration we're grinding new lenses. This is where innovation happens. Our practices are morphing; they're producing new sets of distinctions and new ways to understand the world. It's a place of iteration. There are negotiations about practices – creative abrasions within and between communities that are trying to share something or come together.

Seth: And some of the roots between the communities will be conflicting, right?

JSB: Absolutely! Unbelievably conflicting.

Seth: So, you're describing a model for innovation that holds multiple worlds where some of the basic assumptions in one world are actually in conflict with the assumptions of another world.

JSB: That is why we use this obscure term “negotiation-in-practice (originating with Lee Star).” What has to be negotiated are some of the root structures. A lot of that gets done below the surface, as opposed to negotiation that happens openly and explicitly, on the table, as in conversation. This negotiation is usually around boundary objects. A boundary object is something that is understood by members of the two different communities, and bridges their worlds. One example could be a prototype, another - a blueprint. Blueprints are used by the architect, the engineer, the owner, and others. Each of them sees it differently yet there is

⁴ *The Social Life of Information*, John Seely Brown and Paul Duguid, Harvard Business School Press, 2000

enough shared understanding that the difference of their perspectives can come into focus around it.

Seth: You said this negotiation gets done below the surface as opposed to open and explicit negotiation that is on the table. What is meant here by ‘below the surface?’

JSB: I mean underground, subterranean practices. Let’s take the example of the blueprint being used by an engineer and an architect. The architect has certain reasons for wanting a particular wall to be a particular way. The engineer says, "Well, I can't build a load-bearing wall that way."

Back and forth they go. Suddenly they come together and say, "Aha! Suppose we shift something over here that enables us now to use a new kind of material. Won't that solve the problem?." And so, something new comes about. Both of them bring their practices together for that moment in time and construct something brand new.

Seth: But that's happening explicitly. That's in a conversation.

JSB: Yes and no. There’s a lot more going on than just a verbal conversation. If we were just doing that on the telephone, it probably wouldn't work. But there are a lot of other factors at work here. For example, maybe the architect goes out to the construction site and tries to see the problem from the engineer’s point of view, and figure out what he was really attempting to accomplish by designing the wall that way. The design (or boundary object) is now situated in a broader context. In that shared context, each can adjust his own thinking and practice to encompass the other’s practice. It has to do with becoming more attuned to each other’s set of skills. When these skills come together around a situated boundary object, there can be a really creative compromise.

You'd be surprised. There are all kinds of examples of impossible things that just keep inching ahead. These can be million dollar issues. Many millions of dollars can come from solving some of these problems. That gets your attention.

(laughter)

Seth: It sounds like each side is sifting through the other’s “roots,” exploring the periphery.

JSB: Yeah, it is an exploration – each center is in the other’s periphery, but it is also a clashing. I call it, the creative collision of craft. That collision taking place in a fabric of trust can go – as we were saying with storytelling – huge distances.

Virtually every radical innovation from PARC has come about by creative collision of different crafts usually within a community of practice or sometimes

across multiple communities of practice. If this is so, the question is: How do you build an ecology that makes it easy for practices to collide productively?

Innovation almost always comes from bringing crafts together and having members of each negotiate within and between their practices. That's part of being in a productive and ever evolving community of practice. We don't usually talk about the diversity of crafts within a community of practice. I believe that we're beginning to see the fine grain structure of what is going on here. What it produces can be amazing.

Seth: So the warm, fuzzy nature of community – the mutually supportive community that is often talked about – doesn't indicate the abrasiveness that you're looking for in an innovative environment.

JSB: Nor does social capital! We all talk about social capital, but some of the worst labs that I've ever been in had extraordinarily high social capital within the lab. But social capital can create the feeling, "I'm better than anybody else," and this creates dysfunctional work relationships. It creates the idea that "you're a bad guy." One of the best ways to build social capital is to have a common enemy. If that enemy is in the outside world, then guess what? You'll have a very hard time transferring ideas from the inside to the outside. So, social capital can work against you. Communities of practice are not necessarily very open. They can become very rigid structures, just as rigid as hierarchies. Look at the guilds in medieval times, like the stonemasons. They were very exclusionary. They were seats of absolute power. They were even able to challenge the church!

We need to be careful when we use the term, community. It is often spoken of as warm, mutually supportive and open. But a community is a highly ambiguous domain. A community is not necessarily a warm and mutually supportive domain. What we see in an innovative community is a lot of abrasion and tough clashes among crafts and practices. These iterations can be tremendously exciting and we may end up creating something. But the clashes can be tremendously stressful for the participants when these forms of abrasion take place. Sparks fly, as Dorothy Leonard has said.⁵

Seth: Thanks, John.

JSB: O.k. Hey, good luck!

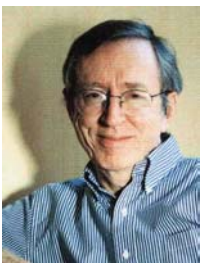
⁵ *When Sparks Fly: Igniting Creativity in Groups*, Dorothy Leonard and Walter Swap, Harvard Business School Press, 1999



John Seely Brown was the Chief Scientist of Xerox Corporation and the Director of its Palo Alto Research Center (PARC). At Xerox, Brown had been involved in expanding the role of corporate research to include such topics as organizational learning, ethnographies of the workplace, complex adaptive systems and techniques for unfreezing the corporate mind. His personal research interests include digital culture, ubiquitous computing, user-centering design, organizational and individual learning. A major focus of Brown's research over the years has been in human learning and in the management of radical innovation. Dr. Brown is a co-founder of the Institute for Research on Learning, a non-profit institute for addressing the problems of lifelong-learning. He is a member of the National Academy of Education and a Fellow of the American Association for Artificial Intelligence. He is a trustee of the MacArthur Foundation and Brown University.



Seth Kahan has successfully used storytelling and community building to lead change and improve performance in organizations for over 14 years. He helped spearhead the World Bank's enterprise-wide knowledge management initiative in 1996 under the guidance of Steve Denning. Seth serves as Business Visionary to the Center for Association Leadership and Distinguished Fellow to the Center for Narrative Studies in Washington, DC. He is writing a book on the applications of storytelling to increase organizational effectiveness. This interview and others can be found on his website, www.SethKahan.com



Steve Denning is the author of the acclaimed book, *The Springboard: How Storytelling Ignites Action in Knowledge-Era Organizations* which describes how storytelling can serve as a powerful tool for organizational change and knowledge management. From 1996 to 2000, Steve was the Program Director, Knowledge Management at the World Bank where he spearheaded the organizational knowledge sharing program. He now works with organizations in the U.S., Europe, Asia and Australia on knowledge management and organizational storytelling. Steve also conducts workshops around the world on organizational storytelling. Steve's website which has a collection of materials on knowledge sharing and storytelling may be found at: www.stevedenning.com