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Science is Culture: Conversations at the New Intersection of Science + Society.

Adam Bly (editor)

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Adam Bly created the online magazine, *Seed*, as well as other websites and innovative means of exchanging information under the umbrella of the Seed Media Group, all of which help to foster an emerging "twenty-first century scientific renaissance" that is intimately tied to the communication revolution, globalization, and technological innovation. His 2010 text, *Science is Culture: Conversations at the New Intersection of Science + Society,* has been translated into Spanish, Korean, Turkish, and Mandarin and serves as a creative example of a new kind of text that reads as part blog, part celebrity interview, and part academic reality show. His virtual on-site locations for these salon discussions create meetings of minds that combine the virtual campuses of Harvard, MIT, and other key institutions with the studios of creative and innovative

thinkers and doers that abandon their disciplinarily defined roles and titles to cover broad and often unresolvable topics. Curious interdisciplinary thinkers like Noam Chomsky, Steven Pinker, and Tom Wolfe are among the forty-four participants chosen by Bly to postulate and contextualize major issues with science and scientific thought as a strong and present subtext. Some are futurists. Some are historians. Some are at the tail end of a remarkable career and others are just finding their place. The book reads like the classic cocktail party trick of imagining your fantasy dinner party and whom you would invite. The pairings of thinkers end up working themselves out in curious ways. It's a brave exercise that Bly has created.

Science is Culture: Conversations at the New Intersection of Science + Society is also a very timely work as a genre or medium that teeters between the fleetingness of a screen capture and a prolonged philosophical debate. It is a format in which the actors may shift and be replaced at any moment by equally fascinating understudies who pick up the tail ends of a conversation to take it to a very different location. The text feels like reading a blog, but with a clear thesis and, of course, a highly edited outcome. The discussions are short, intense, and structured around a question, but also with an appreciation of a spirit of inquiry for inquiry's sake. In this sense the text becomes a new model for an old school philosophical debate. The themes and topics of discussions are reminiscent of similar web-texts such as Worldchanging's 2006 text, *Worldchanging: A User's Guide for the 21st Century*, published by Harry N. Abrams, Inc. However, Bly's text is leaner, meaner, and more precisely edited.

Adam Bly's version of this new web-text genre is particularly interesting, and his role in this text is much more than editor and more of curator whose intent is to keep the spirit of the salon and blogging alive in the transcription. Bly's reputation and background are built upon his online magazine, *Seed*, which represents a new type of science magazine intent upon raising and modernizing scientific literacy and exploring new means of communicating ideas that is deliberately positioned as something that is not a traditional scientific journal. *Seed* has been described as potentially doing for scientific thought what *Rolling Stone* did for popular music. Under Bly's leadership, *Seed* has earned acclaim for bridging ideological and cultural divides between science and society, and in this text, Bly invites key players from the creative industries like art, architecture, and game design to join theoretical physicists and mathematicians, among others, to debate key issues facing mankind.

This text is a record of some of the key conversations held as part of the *Seed*/MoMA Salon, a monthly gathering of scientists, architects, and designers that helped to lay the foundation for *Design and the Elastic Mind*, the ground-breaking exhibition about science and design at The Museum of Modern Art, curated by Paola Antonelli. As the MOMA website states, "*Design and the Elastic Mind* is a survey of the latest developments in the field. It focuses on designers' ability to grasp momentous changes in technology, science, and social mores, changes that will demand or reflect major adjustments in human behavior, and convert them into objects and systems that people understand and use." The *Design and the Elastic Mind*

Exhibition used scientific and technological reframing to suggest an empowerment of design and designers to help envision a brave new world and redefine what disciplines like art and science can do in alignment to facilitate the "massive change" that Bruce Mau and others have advocated for as of late, but have not successfully been able to demonstrate through real life case studies that are in the marketplace, in laboratories, and shaping our world today, even if we cannot see these changes because they exist at the nanoscale or are reduced to streaming digital bits.

In this unique and very readable text, Bly uses conversations between pairings of architects, artists, dancers, designers, and other creative industry pioneers with influential academics and thinkers located in theoretical physics, biology, mathematics, and other traditional hard sciences as a way to ponder life's largest unanswerable questions in the quest for a new way of looking at the world that may "blur the lines between scientific disciplines and the borders between the arts and humanities." His framing of each of these discussions is subtle, but effective. The pairings themselves often become worthy of discussion and elicit questions about everything from disciplinary boundaries to the value of academic and professional credentials. All are seemingly equal in Bly's salon model. This is in itself a challenging concept.

In one of the most endearing discussions Bly pairs Paola Antonelli, the senior curator of architecture and design at the MOMA in Manhattan and curator of the groundbreaking *Design and the Elastic Mind* Show, mentioned earlier, with Benoit Mandelbrot, the "father" of fractal geometry and Sterling Professor Emeritus at

Yale University. The conversation Bly records, while focused on fractal architecture and the death of Euclidian geometry, veers towards a more humanistic thesis by way of a casual conversation that serves as a successful model for how these conversations have been structured and turn out.

In the conversation between Antonelli and Mandelbrot, Antonelli's admission that she wrote her architectural thesis in Milan on Mandelbrot's work over eighteen years ago but has never before met him in the flesh becomes the entry point into a more profound conversation. In her architectural thesis Antonelli analyzed key deconstructivist architectural practices like that of Coop Himmelblau in Austria that went beyond the limitations of conventional Euclidian representation and conventional construction to describe innovative and challenging structures that could only be realized through three dimensional modeling, drawing parallels with Mandelbrot's fractal geometry that Euclidian geometry could not describe. Both fractal geometry and the architecture of Coop Himmelblau required an altogether new scientific means of representing, describing, and defining structures that could only be described by using Mandlebrot's work, if not literally at least metaphorically. The intersection between science and art in this example becomes quite clear.

The ensuing discussion after this revelation locates itself around needs for other new ways of understanding visuality, mathematics, and space and brings up key failures across existing educational structures that are seen to prevent interdisciplinary and speculative thinking by suppressing both science and art as potential mates. Antonelli's discussion heads towards

mathematics, and Mandelbrot begins talking about art in his responses. The two conversationalists switch disciplines liberally as the discussion continues. The disciplinary boundaries seem to melt away as each begins drawing from their deeper understanding of the world and their own fundamental curiosity, including curiosity about how the other thinks, solves problems, and what the world needs to understand key problems. Each of the twenty-two conversations recorded in this text becomes most useful when a key expert begins talking about the subject matter that is not within his or her disciplinary area, but rather his or her partner's. The collaboration of ideas and merging of points of view becomes a model for the broadly humanistic approach to the biggest problems and questions facing us today, which the text and *Seed* are suggesting is needed for a scientific renaissance to be fully realized. Mandelbrot reminds Antonelli that fractal geometry, as a mathematical theory, emerged from Mandelbrot's use of drawing and his needs for visualizing complex three-dimensional problems. Mandelbrot used artistic methods like drawing as research to solve what mathematical modeling could not solve to arrive at an entirely new way of conceiving phenomena that could not be described using Euclidian geometry. Both Antonelli and Mandelbrot agreed, in the end, that important alignments in art and science are just starting to occur, as is our capacity to conceptualize problems that we do not have the tools to describe. The discussion concluded with a very clear indication that we may indeed be on the verge of a scientific renaissance, as the book's overall theme argues.

Other clever and intriguing conversations continue

to pair one scientist with one non-scientist to explore a range of ideas that include evolutionary philosophy, time, and other questions that range from the simply curious to the imponderable like, "What is human?" The heavyweight scholars hail from Harvard, MIT, Cornell, Yale, and McGill, while the creative voices include key figures like Paola Antonelli from the MOMA in New York to the inventor of *The Sims* video game, Will Wright. In the end the most unlikely pairings become the most pleasurable to read. The fantasy dinner parties created through these discussions each have their own individual magic as a result.

The text does present ample and convincing evidence from nearly every corner of the Western intellectual world that we are indeed on the brink of a scientific renaissance, and also presents an equally enjoyable and intellectually stimulating read for anybody who is curious about how the liberal arts and humanities might be able to survive and even thrive on our campuses from a more utilitarian perspective. I have cited this text in white papers myself specifically for its message about the importance of a broadly liberal education in the arts, the sciences, and in my area, the design professions, to help the next generation conceptualize which problems are worth solving.

In a related essay, "Points of Convergence: Law, Mystery, and the Humanities" in *Law, Mystery, and the Humanities, Collected Essays*, the "mystery" of the "unresolvable" questions that generate speculative thought and how these questions relate to law as a discipline with a focus on interdisciplinarity and the humanities in particular for the reframing of legal thought today is the question that is posed. The opening

question in this essay is misleadingly simple, "The chicken or the egg, which came first?" It is now understood to be the egg. We know this because the hard science of evolutionary genetics has solved this for us. Mystery solved. Now that this classic hypothetical has been solved, we are left with nothing to ponder. Maybe we do not need to solve everything? Or maybe we do not need questions that we can solve? Knowing the answer and solving this problem presents a problem for us as a species.

We need alternative ways of maintaining such dilemmas, and these hypotheses lie in the practices, theories, and methodologies we may find in the humanities, arts, and social sciences and the convergence of science and culture as Bly's text infers. These forty-four contemporary thinkers, in less than 350 pages of text, may have just given us the blueprint for the scientific renaissance that Bly is convinced is upon us already. I prefer so to think of this text like a new version of *The Whole Earth Catalog* or, better yet, *The Hitchhiker's Guide to the Galaxy. Science is Culture: Conversations at the New Intersection of Science + Society* is an essential narrative captured from the blogosphere that may help us understand how we can all come together under the umbrella of humanistic and scientific inquiry to arrive at altogether new questions that we may never believe we can ever answer.