The Pixel/The Line: Approaches to Interactive Text

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The Web is a major topic at SIGGRAPH 2001, as it has been for several years. But there has not yet been a substantial discussion at a SIGGRAPH conference of the Web's primary and foundational media: text. This panel brings together five experts who span a range of approaches to responsive text through computer graphics and interactive techniques. The presentations are both theoretical and applied, demonstrating techniques ranging from direct manipulation through artificial intelligence, and drawing on the insights of various fields, from visual art through literature.

Camille Utterback
In three recent installations by Camille Utterback ("Text Rain," "Composition," and "Written Forms"), participants are given an opportunity to literally "play with words." In "Text Rain," (created with Romy Achituv and displayed at SIGGRAPH 2000), participants use their video images to catch and play with virtual letters, sometimes collecting enough letters to read lines of a poem. In "Composition" and "Written Forms," a live video image of the participants is composed entirely of characters or texts. In order to read the texts in "Composition" or "Written Forms," participants must maneuver their bodies to different areas of the screen. Utterback is not alone in her exploration of the visceral possibilities for interacting with language. In "Legible City" by Jeffrey Shaw, a participant rides a real bicycle to control a virtual journey through city streets made from giant letters. Each letter forms part of a famous text written or spoken in that city. In David Small and Tom White's "Interactive Poetic Garden," people push their hands on a squishy liquid pad to alter the course and content of projected words swirling down a waterfall. By creating a physical interface to text, each of these installations raises questions about our relationship to language. What does it mean to "read" a text by catching it, bicycling through it, or pushing it around in a waterfall? Like a calligraphic scroll, a concrete poem, or a written "play on words," each of these installations resonates and intrigues by allowing participants to engage with a series of words on multiple levels.

Camille Utterback is an artist working at the intersection of computation and representation. She holds a BA in art from Williams College and a masters degree from The Interactive Telecommunications Program at New York University's Tisch School of the Arts. She is currently an adjunct professor at the Interactive Telecommunications Program and recently finished a two-year Interval Research Fellowship in the department. The conceptual aspects of her interactive installations have earned her a 1999 Silver NewMedia Invision Award, and she has been selected by *Res Magazine* as artist pick of the year for their Annual Res 10 - "Ten people who are making a difference in their field." On the technical side, NYU has filed for a patent on an interactive system that she developed. She has developed installations for Herman Miller and Shiseido, and her "Text Rain" installation, developed with Romy Achituv, has been purchased by two collectors. Before her digital work, she created art in a variety of traditional media and exhibited widely in the Boston area. Her work has been featured in the *Boston Globe*, the *San Francisco Chronicle, USA Today, Vogue Nippon, V-Magazine,* and *ArtByte*. She has received a scholarship from the New York Type Directors Club (1997) and grants from the Mellon Foundation (1991) and the Massachusetts Cultural Council (1992). She was one of six artists representing New York in the New York, New Faces, New Media exhibit at the NTT InterCommunication Center in Tokyo in the spring of 2000. Recent exhibits of Utterback's work include Game_Over at the Netherlands Institute for Media Art in Amsterdam (2001), and Print on Screen at the Ars Electronica Center in Linz, Austria (2000 - 2001)

Stephanie Strickland
Vannevar Bush wanted his Memex to intercept and capture the neural circuits of the stenographer, who could reduce his words to a phonetic code on the fly, whose encoding practice was encompassed by her body. As an electronic poet, Strickland wants to do the same thing, not from the position of Bush, outside the device, but from the position of the stenographer, inside the new electronic device. In her body, words moved through her as she moved, a fluent circuit of meaning that she hosted, instigated, permitted, understood, explored, and enjoyed; hers is a somatic practice that deflects not only the threat of analytic dispersal, into "simplified language…nascent form…intelligible only to the initiated," as Bush characterizes her code, but also the threat of obsessive recombination and confusion, the multiple overlapping streams of speech she is asked to transcribe. Resituating this fluent knowledge into digital electronic or Web-specific work is an active area of inquiry. Jim Rosenberg and MEZ (Mary-Anne Breeze) are poets who approach this task by working at a granular level of language, each constantly testing for the fertile and provocative even as they host and instigate prolific recombination. Strickland's work and work she has done in collaboration with M.D. Coverley explore several approaches that specifically incorporate the visual. In "True North," a long poem in Storyspace concerned with navigation and various representations of embeddedness, including pregnancy, the most important orienting elements are six emblematic maps and the use of colored words, not to signify computational links (these are signaled by outline boxes in Storyspace) but rather links that can only be traced by human memory. In the Web-specific poem "To Be Here as Stone Is," Coverley and Strickland attempted to inflect the usual Web scan by incorporating pages of minimal text paired with moving images (Java applets) as well as pages where longer segments of text are overlaid on densely suggestive but non-illustrative visual backgrounds. In the Flash poem "Errand Upon Which We Came," Coverley and Strickland choreographed movement for the text itself as well as for accompanying images. Readers of this text can attempt to read it on the fly or press the silver butterfly to the screen if they wish to stop motion, which they must do to "read" rather than "view" it.

Various categories for combining word and image have been proposed by Scott McCloud, with regard to the medium of comics, and many of these apply to online media as well. By his schema, Rosenberg uses "interdependent" combinations, "True North" uses an "additive" combination; MEZ's work "To Be Here as Stone Is," "montage" and "interdependent" combinations; "Errand Upon Which We Came," "additive," "montage," and "interdependent" combinations. In the case of the "Ballad of Sand and Harry Soot," Strickland relies on what he calls a "parallel" combination, where words and pictures seem to follow very different courses. Images from Jean-Pierre Hébert's *Sisyphus* (shown at SIGGRAPH 99), a device that inscribes algorithmic patterns in actual sand, as well as other images suggestive of digital or mathematical culture accompany the text of a love poem, a ballad of love gone wrong or at least not entirely right, between two characters called Sand and Soot. The seeming disjunction of image and text, however, will be bridged by any reader who can read an avatar of biochemical man in Harry Soot and one of silicon liveliness in Sand.

Stephanie Strickland is distinguished visiting writer in the MFA Program at Boise State University, where she teaches Form and Theory: Reading and Writing New Media Literature. Her book, *V*, forthcoming from Penguin, won the 2000 Alice Fay Di Castagnola Award from the Poetry Society of America. Her "Ballad of Sand and Harry Soot" won the 1999 Boston Review prize, and its Web version (www.wordcircuits.com/gallery/sandsoot/) was chosen for an About.com Best of the Net award. "True North," her full-length hypertext poem from Eastgate Systems, won a *Salt Hill* Hypertext Prize. Her other hypertext poems on the Web include collaborations with M.D. Coverley, "To Be Here as Stone Is," published in Riding the Meridian, and "Errand Upon Which We Came," in Cauldron & Net. She has published several essays on electro-poetics, including "Dalí Clocks: Time Dimensions of Hypermedia," *ebr*11, Winter 00/01 (presented at DAC 2000), and the hypertext essay "Seven League Boots: Poetry, Science, and Hypertext." She is the author of the print poetry volumes *True North, The Red Virgin: A Poem of Simone Weil,* and *Give the Body Back*.

Bill Seaman

Seaman's research examines a specific transdisciplinary realm of Recombinant Poetics (coined by him in 1995) as brought about through advanced, generative, interactive art works. Recombinant Poetic works enable a vuser (viewer/user, pronounced viewser) to act upon and explore varying juxtapositions of computer-based media-elements, behaviors, and processes, to examine in an experiential manner computer-mediated environmental meaning production. The generative component is essential to Recombinant Poetics and differentiates it from other fixed virtual environments. A set of poetic potentials is made operative within these generative Recombinant Poetic spaces. A number of foci inform authorship and inter-authorship within such environments: inclusion of particular media elements and processes, the manipulation of media-elements as vehicles of communication and/or poetic exploration the ability to network the environments and to work and explore in a distributed manner, the conceptual position of considering the space as a continuum between physical and virtual environment, the potential for developing new forms of interfaces (layering and parsing different physical and "sensing" mechanisms), the potential to use Recombinant Poetic systems as generic tools for non-art purposes – all will be discussed. In particular, new approaches to meaning production in computer-based space is empowered, where each media element can be seen as a field of meaning having a particular meaning force. Participants bring their mind sets (or historical embodied field of past meaning relation) and participate in an ongoing summing of the meaning fields. Alternate configurations of media elements and processes can be observed, using the generative environment as a discourse mechanism to explore how meaning arises in such a space. This approach to meaning conflates the logocentric with the non-logocentric, and places text in dynamic relation to image and sound (all functioning as language vehicles) in a non-hierarchical environmental approach to computer-mediated meaning production.

Seaman discusses examples from his work, including collaboration with the Dutch programmer Gideon May, entitled "The World Generator/The Engine of Desire" (an interactive system that enables "vusers" to generate poetic worlds in real time in virtual space, based on a rotating template of potential choices). The piece presents a construction and navigation environment displayed through a series of pre-generated 3D computer graphic models, real-time behaviors related to chosen objects, a set of video loops projected onto selected objects (to function as texture maps), still-image texture maps, a selection of text modules, a set of location-sensitive audio/musical objects, and specific graphic variables. Errki Huhtamo has coined the term "world processing" to describe engagement with this environment. The system is facilitated through a new interface metaphor. A series of connected wheels is presented at the bottom of the screen. Each wheel presents a rotating set of potential choices. From the front, the viewer sees a set of curved shelving wheels of variables that can easily be explored. Each wheel is actually a rotating belt so that, potentially, huge amounts of information can be contained and accessed. Seaman also discusses his new work funded by Intel entitled "The Hybrid Invention Generator." This work explores an operative, Recombinant Poetic machinic genetics.

Bill Seaman received a master of science in visual studies from the Massachusetts Institute of Technology in 1985. He has a PhD from the Centre for Advanced Inquiry In The Interactive Arts, University of Wales, Newport. His work explores text, image, and sound relationships through virtual reality, video, computer-controlled videodisc, CD-ROM, photography, and studio-based audio compositions. He is self-taught as a composer and musician. His works have been in numerous international festivals where he has been awarded prizes such as the Prix Ars Electronica in Interactive Art (1992 and 1995); International Video Art Prize, ZKM; Bonn Videonale prize; First Prize, Berlin Film/Video Festival, for Multimedia in 1995; and the Awards in the Visual Arts Prize. Selected exhibitions include 1996, MEDIASCAPE GUGGENHEIM, New York; the premiere exhibition in 1997 of the ZKM; 1997, Barbican Centre (London); 1997, C3 (Center for Culture & Communication),

Budapest; in 1998, Portable Sacred Grounds, NTT-ICC Tokyo; Body Mechanique, The Wexner Center, 1999. He is currently professor in the Department of Design Media Arts, UCL.

Nick Montfort
The form known as "interactive fiction" (typified by the text adventure) uses natural-language input to direct interaction in a narrative world, which is also rendered in text. After a period of commercial success lasting through the late 1980s, the form has been preserved and advanced by hobbyists. Free and open development systems exist and are being improved, and interesting literary experiments have been among the hundreds of free works recently released. The interactive fiction form has been ignored or slighted by academics, however, since it is usually associated with commercial home-computer software, non-literary puzzles and logic games, and genre writing. The techniques and technologies of interactive fiction can provide insight into using language meaningfully as input and output in all sorts of creatively driven systems. A look at some recent interactive fiction reveals how the interactor's text is woven into large-scale works of
literary art.

Nick Montfort has earned masters degrees from Boston University's creative writing program and from the Massachusetts Institute of Technology Media Lab, and undergraduate degrees in liberal arts and computer science from the University of Texas-Austin. He wrote and programmed "Winchester's Nightmare," the first interactive fiction work to come with its own computer in a "hardback" edition, winner of the 2000 Best Puzzles XYZZY Award, and "Ad Verbum," the first-place pick of interactive fiction authors in the 2000 IF Competition. He also created, with William Gillespie and Dylan Meissner, the hoax and Web novel "The Ed Report" (honorable mention, 2000 trAce/Att-X New Media Writing Competition). He is co-editor, with Noah Wardrip-Fruin, of *The New Media Reader*, coming in 2001 from MIT Press. In 2002, *Twisty Little Passages*, his critical survey of interactive fiction, will be published by MIT Press.

John Cayley
The "andor" of Pixel/Line, an implicit contrast/linkage, immediately suggests critical issues for the theory and practice of so-called interactive text. Pixel is unambiguously associated with digital graphics. However (necessarily, on screen), pixels are used to build up the graphic images of letters. The "atoms" of one system of digital transcription (graphics) build the atoms of another (writing), although, perhaps, without any great significance or effect accruing from this process of programmatological generation. Do constraints, which are imposed on the manipulation of pixels in order to produce the drawings of letters, tell us anything about those letters or the words they, in turn, compose? Contrast/link the circumstances pertaining to the Line. Lines may also be graphic elements, yet here, I assume, we prefer the reading of "line" as "line of text" as an accepted, scriptable unit of writing. A line is composed of letters, which are the "atoms" of textual materiality.

Letters build words and then lines in a manner that allows far greater significance and affect to emerge from the process of programmatological generation. And yet, paradoxically, the programmatolgical and, specifically, algorithmic manipulation of pixels – to generate or modulate images "per se" (including the images of letters) – is undertaken with a far better grasp of the potential meaning of such manipulation (for example, we all know what to think about algorithmic "blurring" as applied to an image, including the image of a word). With text, there is as yet no accepted repertoire of algorithmic manipulations from, for example, letter to line. An important task for writing in programmable media is to address these difficulties and disjunctures. Interaction with text must be founded on its specific materiality, on "literal" art.

John Cayley is a London-based poet, translator, sinologist, and publisher born in Ottawa. He is the founding editor of Wellsweep, a small press that has specialized in literary translation from Chinese, and he is inernationally known for his writing in networked and programmable media (www.shadoof.net/in). His last book of poems, adaptations and translations is *Ink Bamboo* (London: Agenda & Belew, 1997). He has lectured on the writing programme at the University of California, San Diego, where he was also a research associate of the Center for Research in Computing and the Arts. He is now an honorary research associate in the Department of English, Royal Holloway College, University of London, and an honorary fellow of Dartington College of Arts, in close association with their degree-level course on Performance Writing.

Noah Wardrip-Fruin
Noah Wardrip-Fruin is a writer, text artist, and research scientist at the New York University Media Research Lab. He is currently the Art and Performance Chair for DAC 2001, an organizer of the art program for SIGGRAPH 2001, and editor of The New Media Reader (forthcoming from MIT Press) with Nick Montfort and Michael Crumpton. His current fiction projects include a collaboration with a.c. chapman, Brion Moss, and Duane Whitehurst on The Impermanence Agent, a storytelling Web agent that customizes its story of impermanence for each user. This project was featured at SIGGRAPH 2000 and will appear this year in The Iowa Review Web, at a show curated by Harvestworks at The New Museum of Contemporary Art, and at the Brave New Word event at the Guggenheim Museum, New York. At SIGGRAPH 2000, he moderated two special sessions, a panel, and the gallery talks. He has also spoken at SIGGRAPH 99, SIGGRAPH 97, and SIGGRAPH 96.