

## Visual Artist Sees Scientific Visualization As Precursor To New Digital Art Forms

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"Culture is now a Moore's Law condition," says University of California, San Diego visual arts professor Sheldon Brown. At a national meeting in Atlanta to discuss the future of Internet-based video, Brown argued that "cultural forms undergo revolutionary changes every 18 months as their underlying technological bases redevelop. This leads to the instability of 'mediums' as we used to know them because there isn't the time for them to develop the monolithic structures of expression and economic form that spans generations."

In his March 29 talk at the Georgia Institute of Technology on "Demanding Heterogeneity in the Forms of Culture," Brown speculated on what "art needs to be in our contemporary moment, and why that is different from the art of the 20th century." He contended that culture and artists are changing to make use of new technologies arising from increased bandwidth and advanced applications.

"The next stage of development of cultural forms will further merge the social functions of communications technologies with the expressive forms of culture," said Brown, who is the New Media Arts leader at UCSD for the California Institute for Telecommunications and Information Technology (Calit2) and director of the Center for Research in Computing and the Arts (CRCA), which will be housed in Calit2's new building on the UCSD campus. "The advent of digital technologies as the basis of cultural and communications forms will significantly alter the dynamic and outcomes."

Brown was addressing a session on 'bleeding edge' media technologies during the 7th annual conference jointly sponsored by the Southeastern Universities Research Association and the Video Development Initiative.

"With the technological forms of cultural expression and communication processes intermixing, the content of these new, hybrid forms draw upon characteristics that were formerly associated with one or the other antecedents," explained Brown "To make meaningful use of these emerging methodologies, content will have to work across this dual nature of authored form and communication channel."

After reviewing the early development of cinema as an art form, Brown noted that it reflected attributes of other art forms of its time, including photography, theater, literature and painting, while chemistry, optics and mechanics provided the technological basis of cinema.

As pre-digital technologies developed in the second half of the 20th century, their cost came down and they became more widely available. "This shift in technology access and ownership opened up these mediums to widespread creative engagements," said the UCSD artist. "The expressive forms developed beyond their initial narrative structures, resulting in a regeneration as well as rejection of previous content structures."

Talking about nascent digital culture, Brown noted that "digital technologies developed primarily outside of cultural or social uses." Early digital artists tended to parallel artistic approaches of other 20th century mediums, with the development of formal vocabularies.

"As computer animation and digital imaging developed, the primary eruption of computing on the socio-cultural landscape has been in the development of forms with aspects of both: the Web, and computer gaming," explained Brown. "We need to research actively the creation of meaning in these emergent cultural forms."

The major departure from the way art and technology intersected in 20th century media, according to Brown, is that we can no longer count on relatively few technological standards around which cultural literacy and specific media languages are developed.

"Artists can provide a form of cultural research that explores the possibilities and uses of technologies and new approaches to content," he told attendees. "The work that I've done as an artist has explored various ways in which combinations of interactive computer graphics, video and the Internet provide capabilities for creating experiences that develop and comment upon the conditions of our time."

Added Brown: "The transformation of all cultural forms to computing-based processes propels cultural creation and dissemination across all forms, dissolving the distinctions between them."

Developments in the field of scientific visualization give a radical and powerful methodology for the operation of future media forms. "Media is data and it is driven by what the user or artist specifies," Brown concluded. "The data comes from a combination of input sources such as sensors and optics, and instead of being a singular end point, the final image is just one 'instantiation' of the underlying data."

Brown described some of his own work, including "Smoke and Mirrors," an interactive, immersive multi-user anti-smoking game underwritten in part by Calit2.

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