An Essay: "The Fluid Loop – The splendid tangle of Science Design in Cinema, Games and Life" – *John Underkoffler , Vision Track, GDC 2005*.

As a Conference Associate at the Game Developer Conference (GDC) 2005 in San Francisco, I had a plethora of experiences that helped me form a somewhat educated opinion on the trends in current and next-generation game development. It also opened my eyes to the inner functioning of game studios and the relationship they share with entities such as publishers, venture capitalists and event coordinators.

Of all the activities carried out at the GDC, from getting the chance to talk about effective production techniques with David Perry and state-of-the-art motion capture methods with Dylan Miklashek, the highlight of the conference would have to be attending the hour long keynote delivered by John Underkoffler. His talk which is what this essay attempts to describe, unlike the others gave a fresh perspective on the future of interactivity and content creation for entertainment. This was confirmed by his visionary projections on how future entertainment media would be supported by great strides in scientific research and emergent technology.

'Minority Report', 'The Hulk' and the Syracuse Project were just some of the examples he gave to prod the game development community into building internally consistent worlds. While describing his work on 'The Hulk', he sighted how tremendous background research on existing technology served to bind the film's premise as tightly as possible with corresponding scientific principles.

Underkoffler's efforts while working on 'Minority Report' showcased how meticulously iterative the process of project design was. With a storyline and plot based in the future, the thematic design and creative control could have gone in any direction without having audiences question the authenticity and appropriateness of elements of the movie's plot and setting. However, the research team, after months of compiling relevant data on elements of technology, clothing, architecture, etc came up with a compendium or bible that would serve as reference for the film. He gave the example of gestural interfaces and the head-gear used in the movie that manipulated audiovisual data feeds. How the look and feel to it wasn't simply designed to look sophisticated and cool but was in

accordance to the technology that would have supposedly driven it in the future. Personally, to now be aware of the colossal amount of data and information driving design decisions is timely realization of what the future for this industry will hold.

Another example of innovative use of technology that left many in the audience like me with 'spirals in their eyes', literally, was the concept of pervasive visual surfaces and how they could be used to 'close the loop on reality'. According to Underkoffler, participants in any entertaining interactive setting are subject to some form of positive or negative feedback. In the case of cinema, interaction is restricted to rays of light falling on the eye that translate to emotion the story elicits via nerve impulses in the brain. In the case of a video-game, participants further the level of interaction by affecting the course of the story through vicarious character enactment – key presses on a controller or game pad, for instance. To describe the ultimate goal of interaction through technology, he urged the audience to envision a room in the shape of simple cube lit not by a single light source but a grid of pixel like lights. Millions of these tiny lights would form a two dimensional contiguous array across each wall surface. Each of these pixel like lights would also serve as cameras. Thus, the room would become a closed system exhibiting autonomous behavior sending as well as receiving information (feedback). If such technology were ever to be deployed successfully, one can only wait with bated breath to see it affect the course of mankind. This indeed was the most inspiring part of this session.

For such magnanimous and focused thought to come from a technologist and visionary who barely mentioned the word 'game' in his talk had me upbeat to be part of the technological innovation bandwagon the game industry engenders. I can say with conviction that his talk inspired not only me, but scores of game designers and all those seated in the audience to realize the potential of science and how its proper application could further revolutionize the way games are created.

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