The Eye Doesn't Click – Eyetracking and Digital Content Interaction

short abstract
Multidisciplinary research (science, technology, arts) investigating visual interaction with digital content using 'low-cost' computer cameras for eye-tracking. The research is engaged in visual and technical development, and with public installations in open arenas for citizen feedback.

long abstract
The research is an investigation into 'low cost' eye-tracking solutions using in-built computer cameras. Interface developments are a series of digital triggers that respond to eye and head movements. The resulting proposal is a system of gaze-reactive abstract digital objects that evolve as they are observed.

Different areas of study are tackled here: 1) From the point of view of technology, research in robust computer vision algorithms is needed for efficient visual interaction, and they must be adapted to a low cost environment. 2) From the arts, vsual primitives of gaze interaction must be investigated in order to generate a novel alphabet of gaze based triggers. 3) The abstract digital objects and their evolving behaviour must be designed keeping in mind that their evolution is linked to human observation. 4) Finally, the prototyping of this project is in an open space for feedback in a living lab in the Library of Sant Cugat del Valles, Barcelona. In this space the multidisciplinary team installs artworks to test, understand, and integrate interaction modes from different public and users.

The research action is performed in a framework in which the above mentioned approaches (technological, scientific, artistic, and social-engagement) provide a crossed-feedback that is essential to the outcomes of each part, creating in this way an authentic fused area of epistemology.

The paper publishes a model of information interaction of multidisciplinary research.

To further share findings, we hope to install an interface in the conference, to test and share an audio-visual instrument triggered with eye-tracking.
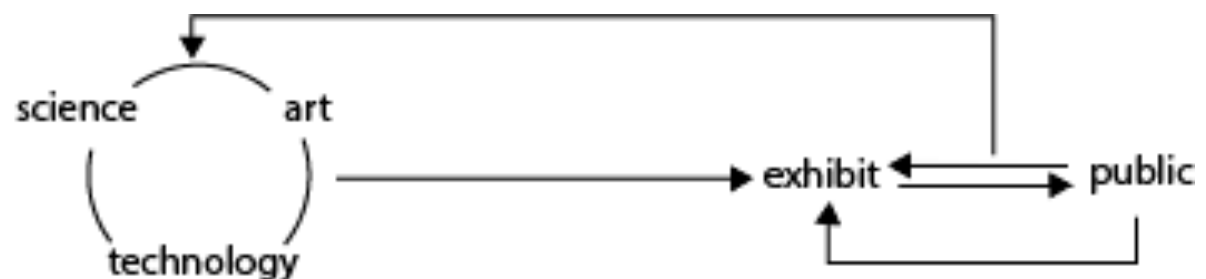

Fig.1: Information flow in Multidisciplinary research.