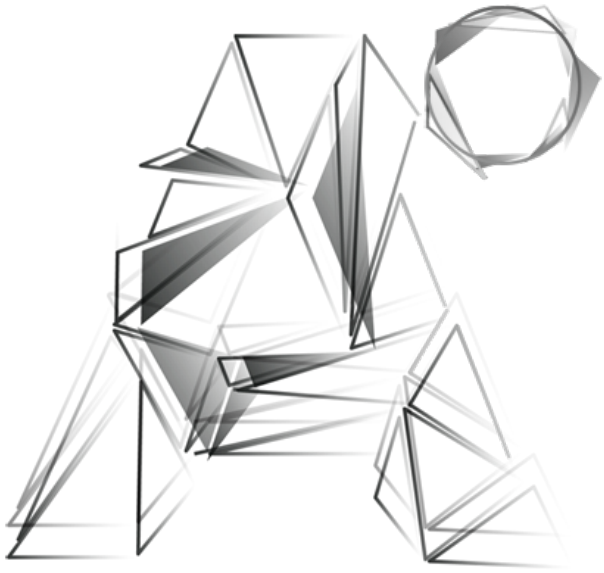

AXION

PRESS KIT

A MEDITATIVE EXPLORATION OF THE SCIENTIFIC METHOD AND HUMAN METAMORPHOSIS, AXION INVITES PLAYERS TO IMMERSE THEMSELVES IN A CUSTOMIZED JOURNEY DESIGNED TO STIMULATE A CONTEMPLATION OF MATTER AND ENERGY.

AXION IS AN UNCONVENTIONAL INTERACTIVE DOCUMENTARY IN WHICH PLAYERS EXPLORE A SERIES OF AUDIOVISUAL ENVIRONMENTS WHILE PROVIDING BIOMETRIC FEEDBACK. PLAYERS GRADUALLY DISCOVER ORIGINAL DOCUMENTARY INTERVIEWS FEATURING DIVERSE SCIENTISTS AND RESEARCHERS WORKING IN THE FIELDS OF DARK MATTER AND DARK ENERGY, INTERSPERSED WITH ABSTRACT CONTENT THAT COMPLEMENTS AND EXPANDS ON THE INTERVIEWS.

SYNOPSIS

Axion is a unique, app-based and online interactive documentary. By allowing a player the freedom to navigate and discover an evolving virtual environment, the project suggests a consonance between the process of scientific discovery and a personal, emotive confrontation with the unknown. As players navigate their virtual world, each will gradually discover intimate and scientifically rigorous conversations with scientists and researchers working in cosmology and particle physics, while experiencing abstract, multi-sensory content that reacts to and informs these interviews. During this process, Axion draws a parallel between visual poetry and scientific concepts, illuminating a creative and expressive side of the discourse that is often not showcased, and thus sharing a facet of scientific life that most people outside the scientific community have lacked.

A primary goal of Axion is to humanize science, and challenge the perception of scientists as distant, alienating voices of mysterious authority. The game experience focuses on the role of science as a source of questions and intellectual transformation, while exploring the personal stories and motivations of scientists struggling at the limits of human understanding of natural law.

By making Axion a non-linear, digital experience as opposed to a traditional documentary, a viewer can emotionally connect to the subject matter in a way that would otherwise be impossible. Instead of simply being shown and told a story, Axion allows a player to discover a story about discovery. By giving the viewer a sense of personal agency, they are invited to experience the story not only via the arc that we design, but through their own personalized path.

We want to challenge the notion that science is a practice far-removed from daily life. We want to leave the viewer not with answers, but with a sense that it is acceptable to be uncertain - realizing that the methods of science provide not the ultimate source of answers, but rather a way to ask questions.

INTERACTION

Axion is designed to respond to both conscious interactivity and unconscious interactivity. The conscious level is the game-like exploration of a virtual environment. The player has control of their progression through the game-space such that their movements determine the documentary content they encounter while fostering a desire for exploration and building an emotional connection to the interview subjects.

Unconscious interaction arises from Axion's algorithmic interpretation of a user's biometric data as an input detached from their direct control, such as pulse rate, breath rate, blink rate, or electroencephalogram (EEG) signals. Because players may be unable or unwilling to provide biometric data, it is not strictly necessary in order to use the program, nor will the experience feel limited for a user not providing biometric data. Instead, this data is used to add a level of personalization to each player's journey to make the Axion experience manifestly unique.

Collecting biometric data serves two functions. First, from the user's perspective, the environment they explore will be a reflection of themselves as the biometric data algorithmically generates and shapes the environment. For example, a topography generated in real time by the waveform of the player's EEG signal, or a forest where each "tree" is a visualization of data from previous journeys including those of other players. The second feedback function, which takes place in the app framework separately from the user's experience, uses biometric data to gauge the player's level of focus or interest. Because some people may be more engaged by technical scientific information while others may be more responsive to emotive stimuli, the app monitors how each player responds to each part of the documentary and adjusts the subsequent content stream. In our prototype, we use EEG data from a consumer-available headset to make this determination, but eye-tracking or pulse rate can also be implemented in future versions.

TECHNOLOGY AND PLATFORM

The backbone of Axion is rigorous, compelling interview content with leading researchers in the dark matter and dark energy fields. In order to incorporate these interviews into the interactive environment in an organic way, all of the footage is filmed with the RGBD toolkit in addition to a traditional digital cinema camera. This creates a moving 3D model of the interview subject that can be manipulated in virtual space, and makes it possible to film interviews at different times and places while maintaining a consistent visual theme. This also enables the documentary footage to be brought into the same software used to generate the 3D environments for the interaction.

In order to make sure Axion is available to as many people as possible, we are targeting several platforms: a Mac & Windows application, which would maximize the possibilities for interacting with biometric data; a website version with slightly limited biofeedback capabilities due to interface limitations as well as the sensitive nature of providing personal data online; and finally an iPad app that will allow a more intimate experience where a user could watch and interact with Axion in any comfortable, personal space instead of at a computer or in an auditorium.

The current Axion prototype is compatible with an off-the-shelf MindWave EEG headset to allow individual users to experience the full biometric version of the app. We chose this headset because it is easily available online for relatively low cost, has rapidly grown in popularity with hackerspaces and schools, and offers an easy entry point to users curious to explore EEG applications.

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