

*Coming Together : Beauty/Truth*  
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## **Project Description**

*Coming Together : Beauty/Truth* is a continuously running installation, in which four autonomous multi-agents negotiate to create ever-varying and unique musical compositions.

The agents begin playing phrases of a single pitch (which eventually fills out to a melody), at unique tempi and tala (rhythmic groupings). They listen to one another, and converge their phrase beginnings, lengths, and rhythmic organization. At the same time, they negotiate a group harmony by moving their own pitches in relation to other agents in order to create a musically meaningful relationship: in other words, music that could have been composed by a human. As well, agents continuously negotiate a collective volume and overall density, balancing group unity with individual desires to occasionally “break away” from the ensemble. The end result is a “coming together” of all musical parameters, a movement from individualism (randomness) to collective interaction (musical intelligence).

Since the initial state of each agent is randomly generated, and its progression and negotiation is not deterministic, the resulting music cannot be predicted, nor can a successful convergence be guaranteed. If the agent's fail to convergence, they acknowledge this defeat, and begin again; if the agent's do converge on all levels, their success is marked by the instantiation of four additional “Beauty and Truth quark” agents.

Beauty and Truth are the original (and far more poetic) names for Top and Bottom quarks. Quarks are elementary particles of matter with extremely short lifetimes that can only be observed in the most precise conditions (e.g. particle colliders); similarly, the Beauty/Truth agents are only born when specific conditions have evolved within their world. Their lives are beautiful, but extremely short (in comparison to the other agents); similarly, they demonstrate the “truth” of the environment within which they exist.

## **Detailed Technical Specifications**

The work runs on a MacBook Pro (supplied). It can use small powered speakers (supplied) if set up in a small room or played at a low volume; or, it could use headphones (supplied). The work is not interactive, so the computer's keyboard will need to be protected. Audiences will need to see the computer screen (or it could be projected (projector not supplied). A detailed description of the work should also be available (on poster, supplied).

## **Biography**

*Arne Eigenfeldt* is a composer, software designer and a researcher into musical metacreation - endowing computers with creative behavior. His music has been performed

around the world, and his collaborations range from Persian *Tar* masters to contemporary dance companies to musical robots. His research has been presented at conferences such as the International Computer Music Conference, New Interfaces for Musical Expression, the Society of ElectroAcoustic Music in the United States, the International Society for Music Information Retrieval, the Electronic Music Studies Network, Sound and Music Computing, Generative Art, and Computational Creativity. He is an associate professor of music and technology at Simon Fraser University, Canada.