

gameplay self-generate affects of pursuer and pursued. In a new work, *Uncle Joe*, players are encouraged to buddy up and commit to long term mutual support outside the game, without any mediation by the organisers. It was encouraging to see Blast Theory awarded the Prix Ars Electronica Golden Nica, which has in the past lauded some commercial, apolitical projects.

Developments in tactical user interface were particularly in evidence at the *Ars Electronica* Centre. Many of these applications are prototypical and easily understood as collaborative production tools. However the possibility of artistic application imbues them with extra frisson. *The Audio Pad* (James Patten, Ben Recht, MIT, USA) enables sole or collaborative users to compose using freely mobile discs that trigger and manipulate predetermined audio compositional variables (eg timbre and pitch). The interface is very attractive, fluid and responsive. Also developed at MIT, the *SAND TRAY* tool enables multiple users to model interdependencies in earth science, engineering or hydraulic projects using a tray of coarse sand as the interface. Depending on how the sand is modelled—add a hill, flatten a mound—the effects on height, topography, water flow and temperature are calculated and projected back onto the sand in realtime. These innovations in tactical and multi-user interface address current issues about collaborative work process and the role of interactivity.

Other displays use sound as data input, and many visitors were fascinated by *Protrude, flow* by Sachiko Kodama and Minako Takeno (Japan), an installation of strongly magnetic fluid which responds to sound inputs. An attempt to model matter freely, as well as express wild and organic shapes, the work responds to synchronous sound by creating 3D patterns of splitting, clustering, flowing or dripping.

Finally, a whimsical work *Earth Core Laboratory and Elf Scan* (Agnes Meyer-Brandis, Germany) encourages a very careful, delicate form of tactical user interactivity. Based on the conceit that mineral-dwelling elves carry on a complex, humanoid life within a parallel universe of mineral cores, the work demands visitors very carefully scan the cores with some pseudo-scientific gear. The more careful,