

Doctors look to treat sick children in virtual worlds

December 27 2011, by Michel Viatteau



This photo, courtesy Societe des Arts technologiques (SAT), shows a child following the movements of an avatar (on screen) during a demonstration of a new therapy designed to treat anxiety and social behavior issues, at the St. Justine Hospital Center in Montreal, Quebec, Canada.

Doctors in a domed laboratory in Canada are designing a virtual world where they hope to one day treat traumatized children with colorful avatars using toy-like medical gadgets.

Sensory stimulation could be used to make a burn victim feel she is encased in a block of ice. [Three-dimensional images](#) of a child's bedroom at home could make him forget he is in a hospital.

"You could take a child suffering from burns and put him in a polar

environment, crossing the threshold of reality, to dull his pain," said Patrick Dube, who is leading a team of medics from Montreal's Sainte-Justine hospital and [software engineers](#) at the Society for Arts and Technology.

"We know that cognitive illusions have an effect on the perception of pain," he said.

At the Satosphere, an 18-meter-wide (60-foot) dome originally designed to provide spectators with a [360-degree view](#) of art projections, the team has set up a hospital room, or "living lab", to try out new treatment ideas.

The dome, touted by Satosphere president Monique Savoie as a "cinema for the 21st century," is a scion of the Circle-Vision theatre unveiled at the 1967 International and Universal Exposition's Bell Pavilion in Montreal.

"We can, through multiple projectors, create immersive environments that integrate not only walls, but also the furniture in a room," Dube said.

Another tool being tested by the doctors would allow them to give medical gadgets the appearance of fantastical, non-threatening toys.

Children would in theory be able to familiarize themselves with "scary" [medical instruments](#), like syringes, easing common fears over medical tests and treatments.

In the hands of a little girl, a syringe is transformed into a storybook rocket. "I'm no longer scared of injections," said Maxime, 11, the daughter of one of the researchers.

The researchers are also looking into avatars that could one day allow doctors and nurses to communicate with children traumatized by

sickness or a crippling accident, who may not be comfortable opening up to an adult.

Such high-tech puppetry might be used to build a child's confidence or help re-socialize them. The person controlling the avatar from another room could ask a child to mimic its movements as part of physical rehabilitation.

The ultimate aim is to apply the technology to help the children "overcome their fears and discover things about themselves," said Patricia Garel, head of Sainte-Justine's psychiatry department.

"There's enormous potential in our discipline, but we're still at a very early exploratory stage."

Virtual communication and video games are known to sometimes have a negative impact on the socialization of children, particularly the most emotionally fragile, who might shut themselves in.

But Garel insists that if the tools are used correctly they could carve a virtual path back to normal life.

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