

Towards a Virtual Reality Aesthetic Programming Interface

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ABSTRACT

The Virtual Reality Aesthetic Programming Interface (VRAPI) is intended to be used for the aesthetic pleasure of programming within an immersive graphics environment; the programming and its immediate effects will be ends in themselves. Animated graphical shapes with apparently organic behaviours will be used to represent the programs and data which will, in turn, control the behaviour of graphical shapes and sounds. The intention is that when the project is completed users will be able to develop a playful relationship with the VRAPI and its related programs. The VRAPI should, if it is successful be perceived as a *genius loci*.

1. Why make a VRAPI?

Work on the Smallworld suite of programs and research to identify the characteristics of interactive computer technology that can be explored in participatory works of art [1, 2], led to the idea of developing a work in which people would be able to build programs and data constructs in an immersive graphics environment for aesthetic purposes. The working title for the environment is the Virtual Reality Aesthetic Programming Interface (VRAPI).

My motivation for developing a VRAPI is that I want to be able to have rewarding and enjoyable aesthetic experiences in a Virtual Environment . The intention is to create an exciting interactive programmed environment that can be explored using immersive computer visualisation technology.



2. What will it be like?

One of the most important characteristics of computer technology is that it can be programmed. I have a continuing interest in those aspects of computer programming that deal with the generation of abstract shapes by visualising the behaviour and interactions of autonomous agents. One of the essential things people will therefore be able to do in the VRAPI will be to build programs and data constructs that generate abstract shapes and interact with agents in the environment that have apparently autonomous behaviours. It will be possible to re-program the environment by manipulating the organic shapes and then observe the resulting changes in the behaviour of the shapes and the rest of the programmed environment.



When exhibiting Smallworld I found that one of the misconceptions that people had about it was that it was intended to be a tool (or medium) with which they could make their own works of art. I would like to avoid this with the VRAPI. The intention is that users will be able to develop a playful relationship with the VRAPI and its related programs.

3. Identity of place

In "Place and Placelessness" [3] Relph identified what he called the 'raw materials' of the identity of places:

- Physical Appearance (e.g. topography)
- Activities (e.g. economic functions and social activities)
- Meanings (e.g. particular significance deriving from past events and present situations)

He wrote: "The dialectical links between [these materials] are the elemental structural relations of that identity".

The appearance of the VRAPI is initially likely to be similar to the abstract shapes generated using Smallworld [4] but I hope that once it is possible for me to work within the VRAPI, new shapes will be included that I will only be able to envision after I have actually worked in an immersive graphic space.

The activities within the VRAPI will include the interactive behaviours of the autonomous agents. In Smallworld these included the primitive behaviours of chasing, fleeing, eating, mating and giving birth. Combinations of these led to the emergence of settlement patterns, defensive barriers, channels, flocking and herding behaviours, etc.. In the VRAPI the addition of extra primitives like message-passing and imitative behaviour should give rise to more complex behaviour patterns. The user would also act within the VRAPI.

In the VRAPI the user can be expected to assign significance to relationships between past events and present situations both inside and outside the VRAPI. The agents may also be designed to assign significance to the relationships between past and current situations.

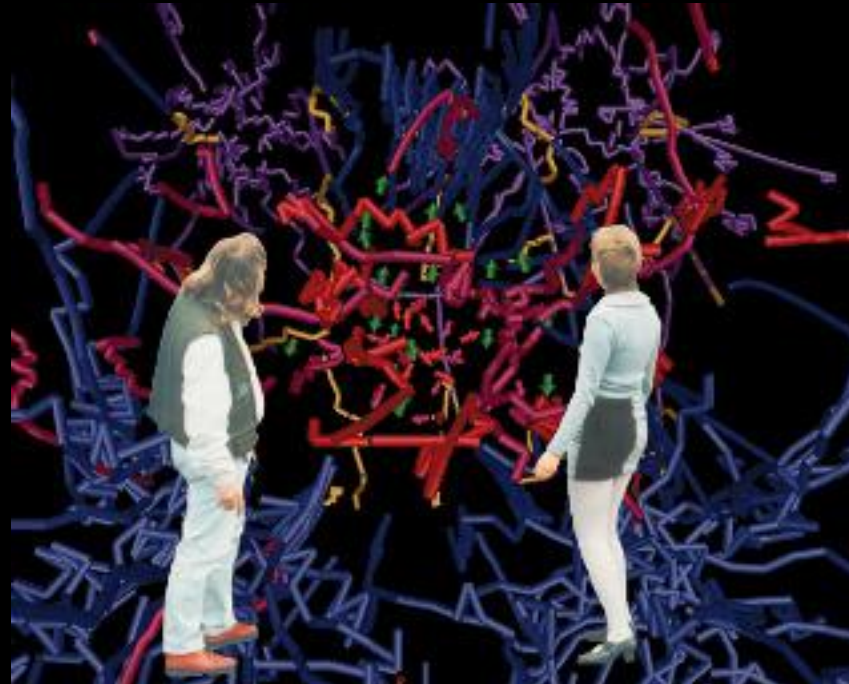
By incorporating these elements the VRAPI could constitute a place with identity. Relph identified a fourth aspect or dimension of identity: 'spirit of place', 'sense of place', or 'genius of place', (*genius loci*) - "All terms which refer to character or personality." This aspect of the identity of place, he wrote, is "... less tangible than the others, yet serves to link and embrace them."

That users will be able to manipulate shapes in the environment to reprogram it will, to some extent, change its appearance and the behaviour of the objects within it. There will, however, be a limit to what may be programmed. It is anticipated that, as with any programming task, when the environment appears to resist being programmed in a particular way, the user will interpret it as the intervention of a conscious entity. It is my intention that this emergent property of the VRAPI will contribute to the sense of place, rather than diminish it, as the user begins to identify the entity as the spirit of the place; the VRAPI will be perceived as a *genius loci*.

4. Incarnations of the spirit

"Spirit of place can persist inspite of profound changes in the basic components of identity ... the spirit of place that is retained through changes is subtle and nebulous, and not easily analysed in formal or conceptual terms. Yet at the same time it is naively obvious in our experience of places for it constitutes the very individuality and uniqueness of places". [3]

It is often argued in negative criticism of objects (like prints or plots) produced by artists using computer technology that they are not unique. It is argued that as computer technology makes it possible to make any number of instances of a given work that the value of the work as art is in some way diminished. Virtual Environments, the VRAPI for example, can also be replicated any number of times. These programmed environments do, however, have a potential quality that can be shared across their various incarnations which would ensure the necessary uniqueness - they can have a recognisable and particular 'sense of place'. It is this genius loci that I would like to achieve in the VRAPI.



5. Note

Until it is possible to access an immersive system of suitable quality initial experiments will be pursued in a non-immersive system. Work in progress on these initial experiments will be exhibited at the poster session.

References

1. Bell, S. Creative Participatory Behaviour in a Programmed World. Leonardo, 1995;V28 #3: 171-176.
2. Bell, S. Participatory Art and Computers, PhD, Loughborough University of Technology, U.K. 1991.
3. Relph, E. Place and Placelessness, Pion, London, UK, 1976.