

**Knowledge, Knowing and Being: an investigation of
software art as a vehicle for the exploration of
emerging concepts in language and cognition**

by

William Hart, B.Sc. (Hons)

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Statement of originality

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Abstract

The development of the computer has had a major impact on almost all aspects of knowledge and culture: it has had a profound impact on our understanding of complexity and intelligence; it is a mirror made from what we thought we knew about ourselves, often defining us by revealing what we are not.

Artists have been exploring the computer as a medium for over forty years, yet for most of that time art constructed through the medium of programming, has oscillated between formalism and techno-utopianism. The practise of software art is based in formal language: the manipulation of symbols and logic. The expression of interior thought in a distinctive form is often confounded in this medium.

This project considers the metaphorical representation of cognitive process (the codes of knowledge, the processes of knowing, and the states of being) in the mirror of computation and in the light of insights and theories about language and cognition that have emerged from our interaction with the universal machine. An open-ended methodology for software poiesis has been developed through making the works that form this thesis.

The thesis consists of four works, constructed from software and manifested on flat panel displays as temporal images. *The Conditions for Ambient Cognition* has four parts: *Faith in Reason*, *Ontological Drift*, *Dialectic Seepage*, and *Transcendental Jitters*. The four parts follow processes of cognition and being; perception, sensation, communication, action. The second work, *Stories about You*, is a meditation on the construction of personal and social consciousness; *Communal Sense* considers the communication of knowledge and development of understanding. The fourth work, *The Transient Taxonomies of Art*, is an examination of the concept of an ecology of ideas.

The significant outcomes of this project demonstrate the application of the methodological process, and contribute towards the development of a fluid, expressive and unrestricted form of practice in software art. This methodology is independent of a particular set of software, but does suggest a process for the evaluation of software tools and environments so that it can continue to be applied as software develops. A related aspect is the consideration and selection of the material qualities of software, algorithms and numerical function, that can be used to enhance the work and give it a

Abstract

distinctive quality. The concept of open-endedness that has emerged from the considerations of the materials of software art is crucial to resolving the confusion between algorithmic behaviour and novelty in software art.

This research has shown that with a greater understanding of the nature of complexity, and the semantics of expression through formal language, the medium can develop into a mature and distinctive form. Potentially, software art can exert a wider influence on our understanding of ourselves, our coexistence with the computer, its future application and development.

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