

leader of the ELMCIP anthology, a collection of European works of electronic literature in multiple languages and exemplary of diverse practices. This anthology also includes pedagogical materials. The University of Jyväskylä produced a seminar on Electronic Literature Publishing and produced a report on different publishing venues for electronic literature in Europe. The University of Ljubljana arranged a seminar focused on the connections between electronic literature and new media art in a more general sense, apt given the fact that work in this field is as likely to be exhibited in a gallery context as it is to be published by any conventional means. A symposium at University of Amsterdam focused on Digital Poetics, wherein scholars considered the relationship between traditional literary research methodologies and the strange artifacts and practices of digital writing. At University College Falmouth, a workshop focused on Electronic Literature as Performance, informing development of some works in the Remediating the Social programme of artist commissions. A special issue of the journal *Performance Research* will follow that gathering. At the University of Edinburgh, an ethnographic study of several e-lit communities has been produced, as well as the conference and exhibition Remediating the Social.

Although this conference is the last event of the ELMCIP project, the funded work will continue through June 2013. A second book, including the ethnographic study, the report on European publication venues, reflective reports from each of the PIs of the project on their specific research theme, and recommendations for policy makers emerging from our research will follow next year. The online database will also continue to be maintained and developed well beyond the duration of the project. Most importantly, ELMCIP has itself resulted in a creative research community that has greatly expanded the field within Europe. The connections between international researchers resulting from the ELMCIP project will continue into the future. All of the activity produced by ELMCIP has resulted in an energising momentum in the field of electronic literature. Two of the major international conferences in the field, the Electronic Literature Organization conference and the E-Poetry Festival are for example already planning European iterations in the near future. It is a great time for Electronic Literature in Europe.

## REMEDIATING THE SOCIAL

Simon Biggs

The proposition of Remediating the Social is whether creativity might be considered a property emergent from a multi-modal social apparatus rather than, as is more commonly assumed, an attribute of individual or collective human agency. This proposition has been formulated within the context of an expanded apprehension of individual and collective ontology that considers selfhood, at least in part, as a socially contingent construct and, in this sense, both fascinatingly and idiosyncratically, a creation of the social space from which it emerges and is sustained within. In this context creativity is apprehended as a reflexive property of the inter-agency of social interactions, rather than as an activity concerned with the origination of novel things or a capability invested in an individual or group of individuals.

Remediating the Social seeks to explore this proposition through considering instances of practice that employ digital and networked systems, in their structure and function, and evidence these emergent characteristics in the processes involved in their making. Our focus is social media – not social media in the sense of media that are primarily concerned with enabling social interactions (e.g.: Facebook or Twitter, although these might be within the remit of this engagement) but media that are part of the apparatus we can identify as the social in action. The most fundamental medium that exhibits this property is language itself – and thus it is probably no accident that many of the artists encountered in this context often work with language and literary form. Another medium, which we will argue shares these properties in critically important ways, is the computer.

The artists and authors involved in Remediating the Social work with digital and networked systems. One way or another, they work with computers. Their practice engages people, individually and collectively, as mediated by (sometimes generated or emergent from within) machines. Such practice demands we ask, where is agency? This question is key to the work of many of these artists. Indeed, one would suspect that many of the artists and authors, whose work is documented and discussed here, choose to work with computers and networks because the issue of agency is key to their inquiry – they seek to question the inter-agency of author, reader and medium, often by problematising our apprehension of where the work originates. They ask us to consider how agency might be identified within constantly changing patterns of socially contingent inter-agency.

In this context we should remind ourselves of Terry Winograd's observation that 'the computer is a physical embodiment of the symbolic calculations envisaged by Hobbes and Leibniz. As such, it is really not a thinking machine, but a language machine' (Winograd 1991). Winograd's central argument is that the digital is of itself symbolic and thus language *per se*. He proposes that the computer is an evolution of writing and literacy, where language can be autonomic. Thus agency can be considered abrogated from the human and perceived as emergent from diverse origins. The computer can also be regarded as a central element of our contemporary social apparatus. Therefore, we can propose that just as the computer is more than a machine we can use to 'do' or 'make' language, so social media can be about more than the media we use to be social. If we accept that the social is linguistic, as will be proposed below, then we can also accept that computers are social, in the sense that Winograd argues they are linguistic.

Here we encounter an ontological problem related to issues concerning technology, revelation and agency, as addressed by, amongst others, Marshall McLuhan (sometimes considered, perhaps unfairly, to have misconstrued Heidegger's foundational work on agency and revelation in *The Question Concerning Technology* (Heidegger 1977)) and Robert K. Logan. Logan's work on the origin of language and culture as co-emergent phenomena with, or of, the (social) evolution of mind is relevant here.

Syntactilized verbal language extended the effectiveness of the human brain and created the mind. Language is a tool and all tools, according to McLuhan (1964), are extensions of the body that allow us to use our bodies more efficiently. I believe, that language is a tool which extended the brain and made it more effective thus creating the human mind which I have termed the extended mind. I have expressed this idea in terms of the equation: mind = brain + language (Logan 2005).

Logan was inspired by the following passage from McLuhan:

It is the extension of man in speech that enables the intellect to detach itself from the vastly wider reality. Without language, Bergson suggests, human intelligence would have remained totally involved in the objects of its attention. Language does for intelligence what the wheel does for the feet and the body. It enables them to move from thing to thing with the greatest ease and speed and ever less involvement. Language extends and amplifies man but it also divides his faculties. His collective consciousness or intuitive awareness is diminished by this technical extension of consciousness that is speech (McLuhan 1964).

Putting aside the rather reductive logic of McLuhan and Logan, if we can apprehend the mind as emergent from the social agency of language then our ontology, individually and collectively, can subsequently be interpreted as a function of whatever our (social) inter-agency is at any given time. As such, we are never fixed as individual beings but always in flux, always becoming something other. It is this process of contingent inter-agency which we understand, in the context of *Remediating the Social*, as the process of 'remediation'. It might be considered a generative bifurcating autonomic process, developing from state to state, as Bolter and Grusin argue is the case for media (Bolter & Grusin 2000). In this respect the system is indeterminate, although it is possible to make assumptions about what a likely eventuality will be given initial states of inter-agency. Such emergent systems can be considered within the framework of 'ergodic' theory, a branch of complexity theory.

It has been argued by Espen Aarseth (Aarseth 1997) that the 'ergodic principle' should underpin any definition of cybertext, a literary form that exists primarily in computers and networked systems but which, as Aarseth argues, is subsumed by a more general concept of non-linear textuality, as envisioned in ergodics. Ergodics is a term derived from the Greek for 'path', and in this context is intended to describe the multiplying bifurcations of the classic cybertext but also other literary forms, not necessarily mediated by computers but never intended to be read in a linear manner, such as dictionaries and encyclopaedia. The ergodic principle derives from work in physics, specifically thermodynamics and the statistical modelling of emergent behaviour in complex systems. This conceptual lineage suggests connections with another paradigm emergent from thermodynamics, cybernetics – a conceptual framework that is echoed, at least in part, in the term cybertext.

The role of emergence is evoked in ergodics, as it is in a related concept in cybernetics, 'autopoiesis'. This concept considers biological life itself as a pseudo-linguistic cybernetic process. Maturana and Varela describe the autopoietic as the organising principle of the autonomous living thing, almost literally a self-making, and consider the manner in which this process is conceived as linguistic in character, underpinning what Maturana and Varela term a 'biology of cognition' (Maturana & Varela 1991). They take this proposition explicitly into the linguistic and social domains when they write 'The central feature of human existence is its occurrence in a linguistic cognitive domain. This domain is constitutively social' (ibid). Taken together with Logan's arguments and the principles of ergodic theory, an ontology of the individual, within a model of social emergence, can be envisioned that places language as central in this process.

At the very outset of the ELMCIP project (Electronic Literature as a Model of Creativity and Innovation in Practice, of which *Remediating the Social* is part) we asked 'whether creativity might be regarded as a form of social interaction rather than an outcome. How might we understand creativity as interaction between people and things, as sets of discursive relations rather than outcomes?' (Biggs & Travlou 2011). In addressing this question we referred to the anthropological inquiries of James Leach, into how people might make one another. As we noted, Leach has observed 'the role of 'creativity' in the ways people generate new places in the landscape' and has argued that,

...in so doing, they also generate new people, who emerge from these places, and objects which facilitate or even participate in these creative processes. Making people and places involves relations to other people and to spirits and ancestors that embody, through song/design/dance complexes, the generative potential of land itself (Biggs & Leach 2004).

The ethnographic studies that Penny Travlou has undertaken as part of the ELMCIP project, described elsewhere in this volume, have followed and traced social connections within and between specific creative communities, describing bifurcating and rhizomic pathways and connections between them which, in many ways, resemble the ergodic

principles of the autopoietic; what Tim Ingold has described as the 'lines along which things continually come into being. Thus when I speak of the entanglement of things I mean this literally and precisely: not a network of connections but a meshwork of interwoven lines of growth and movement.' (Ingold 2008).

It is striking how the social and linguistic structures inherent in these processes appear to mirror one another and are evoked in the creative work undertaken within and driving the existence of these communities.

Not dissimilarly, Friedrich Block has conceived 'poiesis' as '...a communicative and social medium of the second order, where art is generating itself in all possible ways according to the autopoiesis of society. Thus, artistic poiesis is a model or simulation of the procedural construction of reality.'<sup>1</sup> (Block 1999). In this context, we are able to articulate what we mean by *Remediating the Social*: it is the recognition that the poetic and autopoietic are linked by more than their superficial linguistic resemblance and by their evocation of the principle of self-making, through their deep connection with the linguistic and the role of language in social formation. The poetic principle is considered here to be innately generative, concerning how language can generate numerous alternate interpretations, as further linguistic instances, through the processes of association undertaken when 'creatively' reading a text or, indeed, looking at a picture, watching a film or listening to music. The profusion of meaning inherent in the poetic can similarly evoke the autopoietic processes we can see in the processes of social formation and the relationships we all create with one another as we live our lives – or might we say, the lives that are created through relationships emergent in autopoietic social spaces?

In a post-convergent technological context the character of interpretation can be seen to shift profoundly, with consequent impact on power relations. This context might be understood as a form of expanded hermeneutics, what Foucault termed a *dispositif*...

...a thoroughly heterogeneous ensemble consisting of discourses, institutions, architectural forms, regulatory decisions, laws, administrative measures, scientific statements, philosophical, moral and philanthropic propositions – in short, the said as much as the unsaid. Such are the elements of the apparatus. The apparatus itself is the system of relations that can be established between these elements. (Foucault 1980).

When our means of representation function across media, involving multiple senses and diverse epistemological frameworks, then our understanding of things becomes multi-perspectival and multimodal. Roberto Simanowski articulates this shift in both processes of representation and interpretation when he writes,

In postmodern times, interpretation is no longer about control or truth. It is about solving the puzzle of meaning that a work of art represents. It is about suggesting, playing with ideas, reflecting and sharing thoughts and feelings triggered by interaction with the artwork. Hermeneutics can be considered 'a metatheory of the play of interpretations.' (Vattimo 1997). No single interpretation should be the end of this process, but there should be no end to interpretation (Simanowski 2011).

In a sense this is a restatement of intertextuality, in action and practice, but presented in the context of an apprehension of how convergence has emerged as the result of discrete digital systems not only permeating but becoming our representational and epistemological tools, echoing Winograd's proposition that the digital is a language machine. This can be considered a transformative process, remaking how we represent, understand, communicate and 'share' things, in short, transforming how we, and other agents, are creative and where creativity can come from. In turn, this has reshaped our society, dependent as it is, as so clearly argued by Leach, on such processes. This is, arguably, where the digital can be the most transformative, allowing us, as creative beings, to re-imagine what our relationships, our mediating systems and, ultimately, what we might be.

*Remediating the Social* thus seeks to trace this process of transformation through the work of artists and authors who explicitly engage media, representation and interpretation in ways that recognise both their multi-agent origins and the manner in which each of these elements of knowledge and experience are intrinsic to a social apparatus where it can be a self-defeating task to seek to discriminate between them as distinct processes. In short, these artists and authors understand that authors and readers, artists and viewers, makers and users, have a deeply problematic and intermingled relationship where

<sup>1</sup>Translated from the German, in a personal email, by Friedrich Block, 2012.

there are more of us participating in each instance of making/using than we might assume and where that 'us' is composed of, amongst others, non-human agents. In this respect a key interest of creative engagement with digital technology is the manner in which such relations can be rendered explicit.

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## PROGRAMMING FOR FUN, TOGETHER

Nick Montfort

Ever since computers have been programmed, people have programmed them together. From almost the first days of programming, people have also programmed them unofficially, for fun, to create literary and artistic works, games, and technically impressive feats that suggest new directions for computing.

In September 2010, at the first ELMCIP seminar in Bergen, I discussed the interactive fiction community, which includes programmer/authors as well as those focused mainly on programming; avid reviewers and critics; people who run contests, in-person events, and online community resources; players; and enthusiasts of other sorts. In this discussion that I have developed for the final ELMCIP conference in Edinburgh, my topic is in many ways broader, although in one respect it is more limited. Broader, because I am not restricting myself to the discussion of interactive fiction or even electronic literature – I am considering creative computing generally. Narrower, because I focus on one type of community participant and one way of engaging with creative computing – as a programmer.

I will present relevant scans, photos, and video to illustrate how programmers have worked together in the area of creative computing. I will also try to make my fourth point (below) by offering concrete examples of how anyone who is conversant with computers can begin programming. In this article, I provide a brief discussion of three types of creative programming practices.

### Four Main Points

I have four main points to make about programming:

- Programming is a social as well as a cultural activity.
- Programming is a deep engagement with computation that can connect the power of the computer to creative purposes in ways that other practices cannot.
- Programming communities are related to computational platforms, longstanding art and media practices, and communities of practice beyond programming itself.
- Programming is not an activity restricted to professionals with years of training; some essentials of this activity can be undertaken (and have been undertaken) by ordinary computer users after a few hours.

These points are interrelated, so I will argue for them by looking at the specific ways that programming has been done at different points in the past. Not exactly a cohesive history, not an archaeology, not a fully traced genealogy, I offer instead simply a few glimpses of how programmers have worked over the years in different contexts. To be clear, I am really considering not how they have worked, but how they have played. That is, I am considering how programmers have engaged in creative computing.

### Human Moments in Programming

There are many examples of social programming from the earliest days of general-purpose electronic computing, when women worked as 'coders' (as they were initially called), programming the ENIAC. Whether it is the development of a new Data General computer (Kidder 1981) or the early work to define and enable the Internet (Hafner & Lyon 1996), work with computation is clearly not isolated from society, and programming, however wizardly it may seem, is not an abstract and hermetic activity. As many writers have explained, social programming is not restricted to creative, unofficial uses of the computer. Teams work together on scientific projects, military applications, and business systems. It is the creative and unofficial type of computing, however, that seems to connect to the development of electronic literature most directly.