

# Digitising Ariadne's Thread: Feminism, Exscription, and the Un- folding of Memory in Digital Spaces

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## ABSTRACT

Working against the instantaneity of the hyperlink, new forms of feminist praxis work with movement and the unfolding of new networked and digital spaces which remake histories of women's work. In this paper we introduce the concept of feminist exscription to characterise the kind of performativity which refuses the evaporation of sexual difference and which draws on the lived materiality of bodies and their insertion back into the network.

## KEYWORDS

feminism; exscription; network culture; digital culture; memory; movement.

## RESUMO

Trabalhando contra a instantaneidade da hiperligação, novas formas de práxis feminista usam o movimento e o desdobramento de novos espaços digitais em rede para refazer as histórias do trabalho das mulheres. Neste artigo, introduzimos o conceito de excrição feminista para caracterizar o tipo de performatividade que recusa a evaporação da diferença sexual e que se baseia na materialidade vivida dos corpos e na sua reinserção na rede.

## PALAVRAS-CHAVE

feminismo; excrição; cultura da rede; cultura digital; memória; movimento.

The computer emerges out of the history of weaving, the process so often said to be the quintessence of women's work. The loom is the vanguard site of software development. (...) [T]he development of the computer and cybernetic machine as which it operates might even be described in terms of the introduction of increasing speed, miniaturization and complexity to the process of weaving. These are the tendencies which converge in the global webs of data and nets of communication by which cyberspace, or the matrix, are understood.  
 (Sadie Plant, "The Future Looms: Weaving Women and Cybernetics", 1995: 46)<sup>1</sup>

**B**y returning to the material textures of women's work as the basis for the analysis of digital culture, we propose that a dynamics of what we call *exscription* works to counter the ontology of the hyperlink and the poetics of "search" by focusing on the production of new forms of spatiality through movement. These virtual and distributed encounters with the unfolding of new spaces make visible and communicable the traces of lived materiality central to new forms of feminist praxis. In examining works by Carolyn Guertin, Shelley Jackson, Jen Southern, Elizabeth Day, and Margaret and Christine Wertheim, we move beyond the critique of the hyperlink as the conflation of space and time, seeing the digital rather as a new site for the production and unfolding of space. As Sadie Plant points out, "tales and texts are woven as surely as threads and fabrics" and in a contemporary context the narrative of digital ontology involves "the weaving of women and cybernetics together" (1995: 46). While Plant's work has been critiqued for a tendency to naturalise the work of the thread (spinning and weaving) as women's work *par excellence*, we would rather understand it in the first instance as aiming to resurrect an occluded history of digital invention by women and beyond that, as a speculative fiction or figuration (in Haraway's terms) enabling us to imagine both technology and bodies *otherwise*.

Histories of imaging of women, women's writing and criticism are in play in this, from the myths of Ariadne and Arachne, through to ontologies of the thread, the stitch and the patchwork. In her foundational work on feminism and digitality, Plant sees the thread as "neither metaphorical nor literal, but quite

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1 Our thanks to Alan Cholodenko for alerting us to this wonderful paper.

simply material, a gathering of threads which twist and turn through the history of computing, technology, the sciences, and arts” (1997: 12). Importantly, we would suggest that in a contemporary context the thread comprises not only a basic unit of online information, but also the understanding of biological networks such as mycelia. This idea of the thread and the network is popularized in the latest *Star Trek Discovery series* produced by CBS which hosts a new kind of “warp speed” travel or hyperlink technology based on galactic mycelia. Lecturing his black female subordinate on the nature of the universe, the science officer Lt Paul Stamets – named after the famous mycologist – declares, in episode three, that

spores are the progenitors of panspermia. They are the building blocks of energy across the universe. Physics and biology? No! Physics as biology! (Season 1, Episode 3)

However, the fact that Stamets is one of two openly gay characters in the new series does nothing to disrupt the patriarchal structure of representation. In fact, it would merely disclose the homosexuality that lies at the basis of capitalist and patriarchal modes of exchange aptly analyzed by Lucy Irigaray (1985: 192), to say nothing of the conflation of physics with biology – an ultimately colonizing strategy by a masculinist science that abolishes the ages old gendered distinction between knowledge/culture and matter/nature which continues to operate socially and culturally.

Unlike the sci-fi technology of the “spore drive” in the new *Star Trek Discovery series* which enables the crew to jump instantaneously from one interstellar place to another, the mycologically-inspired work of Elizabeth Day and the coral reef project of the Wertheim sisters (both discussed below), give rise to a materialist ecology involving life (and death), materiality, and movement – Sylvia Plath, Margaret Atwood, and Emily Dickinson also all prefigured these contemporary mycelial and microbiological networks in their respective poems on mushrooms. Such ontologies emerge from the work of Mary Shelley, and more recently (and across feminist theory, contemporary art, writing and e-poetry from the 1970s on), Hélène Cixous, Luce Irigaray, Monique Wittig, Donna Haraway, Shelley Jackson, Linda Dement, VNS Matrix, Carolyn Guertin, Jen Southern, Elizabeth Day and the Wertheim sisters, among many others. The works that we analyze here as forms of excryptive writing use the principle of rendering visible and traceable the execution of space-time as material thread, material, experiential and traceable. Ariadne remains a crucial figure for way-finding in digital domains, and for the making of space memorable through its performance. Together with Arachne, the spinner of thread, these female figures produce histories that permeate, and future digital experience. We would point here to the suturing of biology, technology and mythology evident in this patchwork conjunction. The spider uses its body as a measure for the production of its sticky web from a gland in its body: biologist Richard Dawkins points out the exquisite

geometry involved in this production (a creative production anterior to its mathematical geometric interpretation), and ironically the term *web* also characterises our contemporary technoscientific digital communication networks. It's worth asking here whether this nomenclature not only refers to the human perception of the spider's capacity for producing connective threads and architectures between itself and its environment, but also carries with it an implicit recognition of the way that bodies provide conceptual and perceptual schemata for our interactions with the world, as Merleau-Ponty theorized.

While recent scholarship (Friedrich Kittler, Bernard Stiegler, and many others) has focused on the eclipse of the human by technological media, we propose that the importance of movement in the distribution of space and time is one of the things digital media works can make palpable, and that this thereby re-introduces the dimension of human perception and the potential for human experience and corporeality into the processes of digitisation. In this context, we ask how feminist architectures, based on the historical refusal to erase lived materialities, are or could be different from contemporary norms of speed and the instantaneity of the hyperlink. Does a feminist architecture necessarily construct a distinct spatiality and temporality? Could this new architecture be based on spatializing memory, drawing attention to its temporal transformations, its exscryptions of space, rather than on the unities and immobilities of what is still a masculinist capitalism?

Deleuze and Guattari implicitly recognise the gendered mythology associated with the material and transformative making of memory. They write:

we could say that Theseus (whose name means "institution") is the great segment, Dionysus is the great becoming and *Ariadne* is the thread which goes from one to the other. (1988: 381)

Deleuze and Guattari also conceive this thread as a form of refrain, in the manner of the child alone in the dark whose singing to herself begins to organise a way out of the terrifying formlessness in which she is lost.

Ariadne's story, then, is a form of "exscryption" which gives and make histories possible. It is the story of way-finding by forming and following a single thread through the labyrinth, and as such it represents the human aspect of the digital domain, producing a humanizing of space on the model of feminine agency rather than the total domination by corporate enterprise and globalization in the form of Google or Amazon, or the Star Trek franchise. Indeed, our analysis suggests there might be ways of resisting the territorializing impulses of these corporations. If "pre-digital" feminism, through its focus on corporeality, sought the reinscription of women's bodies into historical consciousness, and the cyberfeminism of the 1980s and 1990s imaged this as fucking with the machine, making code messy, "wet" and pleasurable (and is currently re-emerging as Xenofeminism, propounding an accelerationist ethos of intensification of the processes of capital), we argue that a feminist focus in the digital age is based

on exploring and mapping the interrelation between space, time, movement and agency.

Here Canadian writer Carloyn Guertin has gone before us. Her early hypertext work, "Incarnation: at the heart of the maze" (made in 2000) enacts a multiplicity of readings of Greek mythology, rendering reading as performative process capable of inventing new connections and new relations between the archetypal figures of Daedalus, Theseus, Arachne, Tiresius and the Minotaur in the maze-like terrain of the text, the original version of which worked like a game where access to different levels was not automatic but had to be earned. These new connections are a means of rethinking and rewriting histories and stories, so that the maze is not simply a terrain to be negotiated, but a series of passages also rendered in the mode of a labyrinth whose continuous walking encourages reflection and meditation. In a later paper Guertin extends this realization of the maze to the concept and architecture of the network where the activity of Ariadne as walker/reader is characterized thus:

She performs space in real time. She writes her body through her movements through the cosmos of these texts as she creates the text and as it writes itself on her. Like life, the text impresses her with the conceptual knots that she experiences in her intradimensional voyagings. It is the intradimensional twist that shows her the way out of the system. (2007: n.p.)

In Guertin's redefinition of reading as wayfaring, the western tradition of knowledge as absorption and reflection combines with the playful cybernetic conscious foreseen by Vilém Flusser (2011), in which writing as a way of knowing takes on the form of active engagement with an outside. If, as John Frow (1997) writes, the nature of memory is always to be story-like, subject to the continual proleptic and analeptic reshapings characteristic of narrative, Guertin's work brings alive the performative — and political — dimension of this process, in which stories are subject to radical indeterminacy and require constant reassembling in a way that privileges (as she writes elsewhere) "pattern over plot." In it, reading becomes a practice of "echo-location," a search for Echo and the agency taken from her by Hera as punishment for the idle chatter with which she distracted the latter from Zeus' infidelities. (Not coincidentally, Deleuze and Guattari emphasise the sonorous aspects of Ariadne's thread as refrain.)

As our previous reference to Guertin's work signals, our focus on the role of human bodies in mediating digital experience owes a huge debt to feminist scholarship on embodiment and the theorization of gender and difference. The history of scholarly feminism is both a history of the refusal to dematerialize corporeality and a history of insisting upon possibilities for dynamic re-configurations and re-patterning of living matter. The graphics accompanying Guertin's hypertext render the maze as fingerprint, pointing to a new epistemology

of the hand (which we have written about elsewhere) and emphasising the materially (in both senses of this word) of bodies in digital connectivity, such that we might talk of Guertin's "threads of bone" (2000 n.p.).

In her extended critique of the hyperlink, Guertin proposes that we think of the digital universe as "a weave of knotted threads":

(...) the knot transcends space-time, reaching across all planes simultaneously as a means of information storage, whereas the link is a means of navigating through this information and enacting the spacio-temporal jump, the act of browsing. The link is a jump within the system, a connection through disconnection, whereas the knot is always already connected, uniting the flow intradimensionally as it simultaneously severs the flow of information by tightening around itself. The link is a gesture performed by the body whereas the knot is a method of encryption, the means by which data gets written on the body. If the link is a gesture — what we do — then the knot is what we are — our memories: those emergent properties of the perceptual system as a whole. (2007 n.p.)

What Guertin points to here is not only the complex weave and weft of life, individual and communal, as a topological network, but to the history of representation and memory as processes of threading, weaving and tapestry. Apart from the mythology of Ariadne, one of the oldest forms of computation is to be found in the making of carpets, hand-knotted with their patterns algorithmically counted out. And perhaps more recently computation is figured in the knitted projects of Elizabeth Day and the Wertheim sisters which draw attention to the networks involved in the algorithms of coral reefs and mycelium "internets" — a phrase used by mycologist Paul Stamets to characterize the communicative aspect of fungus life (in Fleming, 2014: n.p.). By unraveling a genealogical network which stretches from Ariadne to cyber- and xeno-feminism, and the feminist new materialisms, we are also able to recover and remake a feminist epistemology based on the concept of the "thread" which today holds a new relevance to the understanding of digital works as they transform print-based modes of textual engagement.

While the logic of the hyperlink takes us directly from one time-space or one point to another, we see exscryption as a kind of de-cyphering of digitised time by unfolding in space, a moment of en-planation which works against the idea of the vector. Drawing on an epistemology and ontology derived from the history of women's work and mythology, we could think here, as Gilles Deleuze and Felix Guattari have done, of the epistemology of "patchwork". They make special note of the "nomadism" of the first settlers of the "New World" who left Europe and developed the technique of patchwork quilting, a technique inseparable from the "trajectory" and the representation of "speed or movement in an open space" (1988: 477). The notable difference of the "patchwork" from the linearity of the "vector" is its materialisation as a bricolage of scraps and leftovers forming a connective tissue of "stitched" or networked architectures of memory and sensation.

Shelley Jackson's early digital work is exemplary here. Using the figure of Mary Shelley's monster as an archetype for creative appropriation and amalgamation. "If you want to see the whole" she writes "you will have to piece me together yourself" (*Patchwork Girl*, 1995: n.p.), Jackson brilliantly articulates the work of patching together a body, a story, and a feminist history of authorship from other sources. *Patchwork Girl*, an early "multi-media" hypertext, uses the figure of the assembled body as an epistemology — the process of patchwork itself renders both a methodological process of composition, and a body of knowledge.

This form of connectivity has important implications for the workings of memory which has always to be remade through the use and reuse of external mnemonic systems. In oral cultures these tended to be elements such as landscape (for example, the song-lines of indigenous cultures), or images (the memory palace). In codex cultures memory was externalized in archives from which it could be retrieved. Today it resides in the network and cannot simply be retrieved but must be repeatedly performed to come alive. Memory is no longer conscious recall, but is rather immanent, belonging to realm of habit, so that technology disciplines bodies around forms of ritual in everyday use, eliciting gesture and movement in ways that are intimately bound up with capital and its operations in the wider world. Writing is re-ontologised as image, rising again from the flatbed of the book not only to stand upright on signs as Walter Benjamin saw it, but comprising a virtual surround materialized in spatial form. Writing now unfolds itself into external environments, creating new, flexible architectures which might also exhibit their own behaviours, changing shape and form in response to human exploration.

Jen Southern's artwork work, *Here* (2010), is exemplary of the writing of movement in readable form expressed in different architectures. In her paper on co-mobilities, she describes working with the concept of co-mobility, made "possible and visible" by new locative media, and which refers to the "new sense of [being] mobile with others at a distance" (2012: 76). She argues that this "ability to share specific location data adds a new dimension to communication on the move (...) weaving it together with proximity, absence, and presence" (76). *Here* draws together the themes of movement, Ariadne's thread and the map, rendering the co-mobility of bodies, ontologies, and epistemologies both historical and representative. Her installation involves the production of a series of silk maps based around the silk town of Macclesfield in Cheshire, England. During the Second World War, Macclesfield produced the silk used in the making of parachutes and escape maps (rather ingeniously, the latter were produced in the form of pilot's scarves to be worn while flying in military operations). According to the work description available on Southern's website,

You are invited to go for a walk to the site of an emergency landing near Macclesfield with the artist's map (made with the partial perspectives of walkers and a pilot

equipped with GPS), to see the place where a pilot had to navigate from the sky to the safety of the ground” (<http://www.theportable.tv/>).

Exploring “navigation, maps and flight” the silk maps and walking tour “bring together the aerial perspective of the pilot in the sky, the close-up view of the map-user on the ground and the omnipresence of Google maps” (n.p.). These points of view reflect the co-existence and co-mobility of different kinds of bodies and histories, including those of the silkworm whose thread is used as the basis for their representation.

The title of the work, *Here*, reflects upon the production of space and location as an exscription of the co-assembled map. As the work description puts it:

It is the *here* of a memory associated with a specific place. It is the *you are here* of navigation technologies such as maps, GPS and Sat Nav. It is the *here and now* of your current location and a literal *here* of Macclesfield. (n.p.)

Therefore, rather than treating co-mobility made possible by digitality and new locative media as a technological ends in themselves, we concur with Brian Massumi when he observes that “[t]he digital is sandwiched between an analog disappearance into code at the recording and an analog appearance out of code at the listening [or seeing] end” (2002: 138). Digitised information only makes *sense* through analogic experiences such as walking, writing and reading — and experiences of viewing can also be interpreted in this respect as a form of reading. As Massumi (2002) notes, using the example of word-processing, what is processed by computers is not words, but code that gives shape and form to the maps, texts, and images that we see on screen. It is the analogic process of reading that makes words and their worlds — as we “read” we transform the coded operation of words on a screen, or coloured threads into the traces of sound and speech, or images associated with meaning.

While digitality and the hyperlink mean that words, images and their worlds can be “linked” (“sandwiched” by digital technology), so that a reader or user can jump from one time-space to another, the digital works that we explore here operate by *producing* the human body in its relationship to time and space. The digitised connectivity made possible by the hyperlink is only sustained *through* human time. The works we analyse here all perform the unfolding of time and space through movement, or else draw attention to the work of digitality through the disruption of movement (as durational consciousness). This movement in space and time turns out to be crucial to the performance of individual and cultural forms of memory.

If what we call “exscription” is the characteristic aesthetic dimension of the digital, it is also the case that new forms of art practice implicitly acknowledge the importance of creative amalgamation and distribution in the constitution of being, that is, in the constitution of objects, subjects and things.

As in the composition of Jackson's *Patchwork Girl* (and works like Barbara Campbell's *1001 Nights Cast* (2005-8) which includes stories by hundreds of other writers in the work's loosely encompassing gesture), this new emphasis on creative amalgamation makes visible the processes of becoming, for the entities created by this process can only exist as separate and discrete when one cuts them out of the relational or networked and continually evolving field that produces them.

In her study of time and evolution, philosopher Elizabeth Grosz argues that when we isolate material systems, processes and objects, as the result of practical thought, "we cut them out of the lived continuity in which they occur, we transform them and enable them to be schematised, outlined rendered manipulable, to become the objects of scientific knowledge and predictability" (2004: 197). Or perhaps this process of the cutting out and isolating of elements, taken as a methodological habit, is the first step in the potential for creative amalgamation and the performative redistribution of agency. Frankenstein's monster, after all, is an amalgam of other appropriated bodies.

In Mary Shelley's version, unlike the scenarios in Jackson's *Patchwork Girl* where the body parts have former lives, the histories of these constitutive elements are lost, and it is perhaps this missing genealogy which best characterises monstrosity in Shelley's allegorical tale. Shelley's monster is devoid of self-reference commonly thought of in terms of self-consciousness, a receding interiority, a core "inner" being, if you like, laden with meaning. However, self-reference and meaning are always caught up in extrinsic relations. In Shelley's tale the monster lacks the usual markers of self-reference made through extrinsic filial lines. He has no parents (other than his "maker"), murders children, and above all wishes for a partner made of the same stuff as himself in order to alleviate the pain of his singularity. The monster is an emblem of the isolated material object, "cut out of lived continuity," as Grosz puts it above, devoid of its history and genealogy, and lacking the recognition that his intrinsic *meaning* is constituted by extrinsic relation. Finding meaning in extrinsic relation rather than in internal enquiry is not mutually exclusive, but the foregrounding and unfolding of relation and amalgamation surely enables the making of a different kind of intelligence, one at home with the idea of the thread which traces, sutures, and ravel the ideal unity of the object.

Relation and amalgamation are forms of intelligence that require (physical) making rather than (computer) modelling. Powerful examples of this would be the mycelial inspired work of Elizabeth Day, and *The Crochet Coral Reef* project (2005-continuing) by Margaret and Christine Wertheim. In Elizabeth Day's *Mycology* series (2015-17), installations spring up unpredictably like mushrooms wherever conditions are right, taking different forms according to the demands generated by the situation and site of the work and involving different communities in knitting and crocheting mushrooms which Day embeds in mycelial entanglements of string, tape and shredded paper. These entanglements could never be repeated elsewhere in exactly the same arrangement, and each seems

to suggest complex processes of communication and cultural translation — as between the local residents remaining in the small Australian town of Kandos, site of the biannual Experimenta arts festival after the closure of the cement works that had been the town's *raison d'être*, and the artists from outside. These processes are always local and particular, and from them, community, however temporary, must be produced as a living network. Day's own "Risdon Cove Mushrooms," referencing Risdon Cove near Hobart in Tasmania as a site of massacre of indigenous people by the first British invaders, knit together wool and grass in impossible thickets. There could be no greater symbol of the ongoing colonisation of Trouwunna (one of the Aboriginal names for what the British then called Van Diemen's Land) than wool. The grasses, taken from around the area of Risdon Cove, recall the kinds of grasses that indigenous women wove into an astonishing array of baskets and other artefacts. The art of grass weaving is now being reclaimed, revived, transformed through the use of new materials and turned to powerful expressions of culture in the (very different) work of contemporary indigenous artists like Vicky West or Julie Gough. Day's work references and implicitly acknowledges theirs, and implicitly opens a dialogue with them an intercultural exchange between women. For in England (from which Day migrated as a child) as likely as in Trouwunna, the making of textiles, knitting and weaving were traditionally women's arts, even as the industrial revolution in England placed them under the control of the (male) capitalists who owned and ran the mills which employed women at pitiful rates and in appalling conditions. While dialogue between Tasmanian Aboriginal and Anglo women in the present is inevitably difficult, given the history of violent colonisation and the complete dispossession of the Palawa (Aboriginal people), the mycelial networks of communication and distribution that support the fruiting of mushrooms are known to be capable of absorbing toxins from the environment. This is the gesture the work proffers as it turns — not just towards a generalised Aboriginal other — but to call to and recognise the work of particular women, survivors of the colonial wars which continue, albeit by other means, to this day, and whose works renew their claim to country.

By contrast, the Wertheim sisters' *The Crochet Coral Reef* project both creates and models hyperbolic space — a kind of space that is hard or perhaps even impossible to model by computation, which requires analytical description of the terrain in advance of its construction. Following the work of Daina Taimina, a mathematician who discovered that such space could be created with the eminently physical and iterative technique of crochet, the Wertheim sisters created the Crochet Coral Reef project — a series of ever-growing installations which has spawned a plethora of other such sister creations springing up all around the world (including throughout Europe and in Australia) as satellites of the main project. Exhibited throughout the US (most recently at the Minneapolis Institute of Arts) and in London, Dublin, Abu Dhabi and elsewhere, this work has now also been documented and written about in a book (2015) published by The Institute

for Figuring (theiff.org), an independent museum run by Margaret and Christine Wertheim.

The key to their project is the discovery that if hyperbolic space can be thought of as algorithmically generated, it is actually generation from the *imperfect* execution of an algorithm, such that the random variations created by an actual living and therefore constantly changing coral reef in response to varying environmental conditions, must be produced in crochet by varying the rates of increase in stitches. This kind of space requires a rethinking of form as fluid and variable — somewhat similar to Benveniste's description of a kind of form that takes shape "in the instant that it is assumed by what is moving"; that is, form without "organic consistency":

it fits the pattern of a fluid element, of a letter arbitrarily shaped, of a robe which one arranges at one's will, of a particular state of character or mood. It is the form as improvised, momentary, changeable. (1971: 285-6)

In conclusion, then, the works that we have referred to in this paper as exscryptions all work, albeit in very different ways, with this principle of rendering visible and traceable the execution of space-time as material thread, both experiential, experimental and memorial. The figure of Arachne the spinner of thread, is woven into and through the words and works we have referenced here, while the figure of Ariadne opens onto digital way-finding, and the making of space memorable in its performance. These feminist histories form a counterpoint to the masculinist ideologies that infuse popular mythologies and ontologies of technology, science and fiction and, now, the digital *thread* and *network*.

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