

## Kathleen Rogers<sup>1</sup>

### Escrever no Corpo - a Matéria Escura do Genoma

*Writing in the Body - the Dark Matter of the Genome*

#### Resumo

Pesquisa de arte e marcos teóricos que trabalham no sentido de uma reconceitualização do genoma e da epigenética para especular sobre as ecologias da mente, corpo, ambiente e evolução. O estudo da epigenética é um campo emergente nos estudos biosociais e bioculturais, à medida que os biólogos desmantelam os estudos genômicos humanos fundamentais na hereditariedade para reimaginar o genoma como uma entidade dinâmica e responsiva que sente, apreende e responde a contextos ambientais, biológicos e culturais. Com base em dados genealógicos familiares próximos e pesquisas em sistemas históricos de cuidados infantis institucionalizados, o filme fotográfico / poético, *Remembering the Unknown*, explora fenômenos epigenéticos transgeracionais associados à transmissão de trauma e PTSD (Transtornos de Estresse Pós-Traumático).

#### Abstract

*Art research and theoretical frameworks that work towards a reconceptualization of the genome and epigenetics to speculate on ecologies of mind, body, environment and evolution. The study of epigenetics is an emerging field in biosocial and biocultural studies as biologists dismantle foundational human genomic studies in heredity to re-imagine the genome as a dynamic and responsive entity that senses, apprehends and responds to environmental, biological and cultural contexts. Drawing on close family genealogical data and research into historic institutionalised child care systems, the photo/poetic film, *Remembering the Unknown*, explores transgenerational epigenetic phenomena associated with the transmission of trauma and PTSD (Post-Traumatic Stress Disorders).*

*Keywords: new-materialisms, epigenetics, PTSD, trauma, memory*

Research in the context of biosocial, cultural and philosophical theories in epigenetics offer non-reductive materialist accounts of inherited PTSD (Post-Traumatic

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Stress Disorders). My art based research and the photo/poetic film production, *Remembering the Unknown*, is conceptually framed within studies that explore how meanings of trauma can be materially and symbolically inscribed and enfolded trans-generationally into bodies, minds and cultures. There is an upsurge of interest in contemporary interdisciplinary trauma studies with regard to bio-molecular epigenetics that draw on a growing number of new studies that support the idea that the effects of trauma can reverberate down as PTSD in generations to come via epigenetic tags. (Gapp, K *et al*, 2018, Laca & Ventura, 2019) Intergenerational trauma epigenetic researchers have identified numerous non-genetic factors involved in the processing of exposure to extreme physical and psychological suffering. The epigenetic mechanism is understood as environmental causation of DNA methylation and histone changes linked to RNA mechanisms, so that tiny chemical tags are added or removed from DNA in dynamic response to an individual's social and biological context (Laca & Ventura, 2018) and it is these inherited tags that have been identified as potentially triggering intergenerational PTSD in human and animal populations.

Research into how inherited epigenetic traits associated with trauma may impact intergenerationally, on families and populations shifts our critical approach and analysis of trauma in historic and contemporary contexts. Theoretical research in epigenetics is not new, in 1995, Philosopher Eva Jablonka and Biologist Marion Lamb already noted that the gene was fluid and responsive to the environment and that the gene was not the sole agency of information in transmitting traits to descendants. (Jablonka and Lamb, 1995)

Trauma research in humans have also focused on medical/clinical data gleaned from historic periods of war, genocide and famine to show that multiple environmental and genetic factors developed under extreme duress during vulnerable periods of a person's development confer numerous and complex health issues in that individual's descendants. (Gapp, K *et al*, 2018, Laca & Ventura, 2019)

A 2018 animal study found an epigenetic effect associated with inheritable trauma disorders across three generations (Gapp, K *et al*, 2018). This research evidence implies that multiple epigenetic signatures can lead to heightened sensitivities across generations so that descendants can react with PTSD symptoms in the context of similar environmental cues to their close ancestors. PTSD, a condition commonly found in fields of combat in war amongst military servicemen and women, can include emotional symptoms of flashbacks, sensations, aggression, memory problems, anxiety and avoidance. (Harms, 2015) The intergenerational aspects of this research raise important issues and questions about

the socio-cultural, and geo-political context of our shared embodied legacies marking populations and individuals globally.

Tim Ingold, Chair of Social Anthropology, Aberdeen University is known for his socio-ecological theories that focus on the continuum of human and non-human animals, plants, the biosphere and cultural transmission:

Human capacities are not genetically pre-specified but emerge within processes of ontogenetic development that are at once historical and evolutionary. Replacing the 'population thinking' of the Darwinian paradigm with a 'relational thinking' that focuses on the dynamics of developmental systems leads us to a new vision of anthropology, as a science of engagement in a relational world. (Ingold, 2004, pp. 209-221)

Non-reductive materialist accounts of evolutionary biology offer conceptual models of the genome that put environment before the gene. This reversal challenges the fundamental genotype to phenotype transcription model offering a holistic comprehension of our biological origins and the continuum of organic life with psychic and cultural phenomena. (Ingold, 2001)

Antonio Damasio, Professor of Psychology, Philosophy, and Neurology, at the University of Southern California, and adjunct professor at the Salk Institute, traces the origins of life, feeling and culture through emergent phenomena embedded in the homeostasis regulation of living systems, theorising how human motivational processes might be traced and associated with feelings arising from continuous chemical regulatory factors in our cells. Expanding on bacterial symbiosis research established by the biologist Lynn Margulis (Margulis, 1970), he cites chemical bonds within the earliest unicellular life forms as repertoires of qualitative regulation traced to the earliest biosphere. In his writing he describes the emergence of "conscious feeling minds" as the 'Cultural Mind', and proposes a biological homeostasis theory of embodiment contiguous with environmental perception and memory (Damasio, 2018). Damasio's deep eco-cosmological concepts intersect with zeitgeist social and biological themes that include the work of Ingold and Palsson that seek to express the unity between genes, organisms and environment resonate with contemporary post genomic theories to offers an enhanced understanding of evolutionary processes that echo the identification of epigenesis as above/before and not below/after the gene.

The feminist theorist, Karen Barad, Professor of Feminist Studies, Philosophy, and History of Consciousness at the University of California, Santa Cruz is known particularly for her theory of agential realism, an epistemology intersecting with

theoretical physics that offers post human performative accounts of our quantum entanglement with matter, Barad characterises matter as an active participant in the world's becoming, in its on-going "intra-activity". Barad argues that all of the past and all cultural and social phenomena are enfolded materialized through discrete and partial arrangement of a physical apparatuses, with agency conceived as performative diffractive operations within matter. (Barad, 2007)

The feminist and socio-political theorist, Noella Davis from The University of New South Wales argues the significance of Barad's performative materialist theory in relation to epigenetic research into materialisation of intergenerational mental health to note how an individual's environment, both physical and social, current and historical, is enfolded and manifests in biology at the molecular level. She describes how the past cannot be left behind, because materially enfolded, reconfigured and corporeally manifested, making the interesting feminist observation that:

Politics and feminism are particular, contingent, material histories, with each practitioner reconfiguring her or his specific biological and social materialization as their present-day political and feminist actions. (Davis, 2014, 62-77pp)

Critical neuro- bio-sociological, philosophical and feminist theories of the cultural mind dismantle dualist dichotomies of nature versus culture divide and provide an ecological vision of our place within the world, with mental structures, human relations and the natural environment in constellation with each other. In focussing on ways that bodies are dynamically produced, how nature informs cultural meaning and how molecular writing in bodies form and give form, they contribute to a broader conceptual understanding of the culture mind.

The philosopher Catherine Malabou develops concepts of neuronal plasticity in neurobiology, to invoke the nature of brain plasticity as a persistent, transformative movement that gives and receives form. Malabou uses the term "destructive plasticity", to describe the sculpting of dark neuronal forms that constitute entirely new forms arriving out of nowhere. In her writings, Malabou contests earlier reductive models of plasticity as "idealized logical development" to offer new radical descriptions of how the brain can metaphorically explode into "destructive plasticity", drawing attention to the multitudes of invisible interactants that are involved in radically (in)forming and (trans)forming the brain and our sense of self and agency. (Malabou, 2008)

The cultural psychoanalytic theorist, Cathy Caruth writing on models of trauma and cognitive processing observes how traumatic experiences are inextricably

caught up with a paradox in consciousness and argues how trauma is not locatable in the original violent event in the individual's past but identified belatedly and incomprehensively in "the way it is precisely no known in the first instance – to return to haunt the survivor later on" (Caruth, 1996, 17 &4)

The photography theorist, Ulrich Bauer uses psychoanalytic theory to re-conceptualize the mechanics of photo operations. His critical interpretations of photography expand on Trauma studies and cite photography practices as a means to access their dissociative cognitive anomalies:

Traumatic experiences not only distance and estrange the onlooker but are inherently marked by a rift between the victim and his or her experience; the shattering force of trauma results from precisely that brutal expropriation of the victim's self. Thus, because trauma is dispossession and radical self-estrangement, it defines the traumatised individual through somethings he or she does not own. (Bauer, 2005, p20)

His book, *Spectral Evidence, The Photography of Trauma* features an interesting chapter on the photographer Mikael Levin's, 1995 War Story series, described as form of secondary witnessing of the Holocaust through the literature of his father's (Meyer Levin's) WWII archives. Bauer describes ways that the testimonial act of second witnessing photography and trauma intersect:

His (Levin's) photographs illustrate how the knowledge of trauma may be constituted in it's transmission from one person to another: the knowledge of the Holocaust in Mikael Levin's work emerges in the relations between his complex photographs, their viewers and his father's text .... to obey the logic of a kind of "double haunting" in which the son returns to places that were not properly laid to rest by his father's memories at the end of the war. (Bauer, 2005, p19)

PTSD syndrome has been at the heart of critical discourse on trauma in psychology, psychiatry for decades but now numerous interdisciplinary social, cultural and philosophical theories and epigenetic studies support the idea that the effects and experience of Trauma can reverberate down as PTSD in generations of families to come.

Drawing on Bauer's second witnessing themes, the photo-poetic/film, *Remembering the Unknown*, represents a visual arts experiment/research in a new form of life writing that offers a subjective accounting for perceived epigenetic trauma signatures of my father and grandmother - re-witnessing of their lives within the historic institutionalised child care, workhouse and charity school systems in the UK – and brought to light whilst doing research more than 40 years after my fa-

ther's death. Remembering the Unknown is predicated on the concept that inherited trauma that can be triggered or replicated like a script, activated in relation to specific environmental cues. The project has enabled me to bring fragments of an autoethnographic narrative out of the dark - allowing me to contemplate on my own trauma based on my early adult life experiences of repeated and long-term exposure to cycles of abuse and violence. I have been able to use insights offered in this interdisciplinary research to understand my own PTSD syndrome in the symbolic context deeper and more difficult to access intergenerational psychological processes and the tension between knowing and not knowing my father and grandmother's lives. Based on the concept that the genome is not the sole agency in inheritance the work explores epigenetic signatures suffered by generations of my close family, to be read/interpreted a form of secondary witnessing and re-enactment to develop transgenerational Trauma narrative through art. These episodes in my family history should not be lost and the work can be read as reflexive processes of self-realisation and mourning.

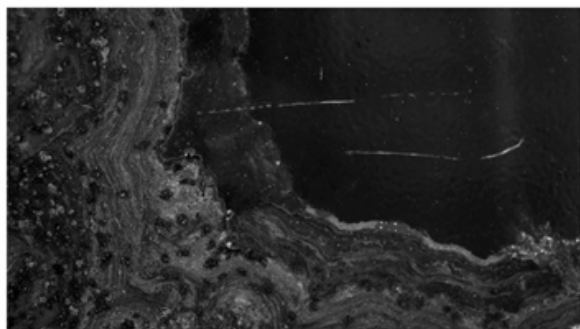


WE ARE ALL

STATELESS

Kathleen Rogers, print from the "I Poor Orphan" series, 2017/  
Remembering the Unknown, 2019.

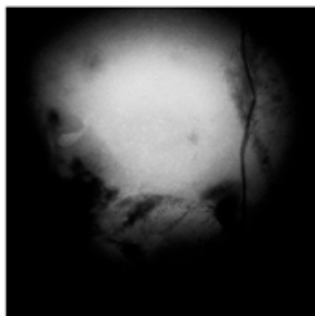
The film produced and screened within the exhibition context of this conference, Remembering the Unknown, applies techniques of motion graphics and animated typographic poetics to combine a number of previous black and white photo series - I Poor Orphan, Here, There and Everywhere produced at CERN, the European Organization for Nuclear Research, these works reflected on allusions to memory and trauma in the wider political and sociocultural collective of remembering of cold war and conceptual capture of cosmic ray sense data.



HERE I AM

Kathleen Rogers, print from the "Here, There and Everywhere" series, 2017/  
Remembering the Unknown, 2019.

The photo series, *Matrem*, was produced whilst working in a scientific stem cell laboratory research context to explore the framing of female absence and to raise questions about the political and ethical status of the orphaned ethereal subject in the theoretical context of the feminist philosopher Luce Irigaray's seminal text, *Hystera*.



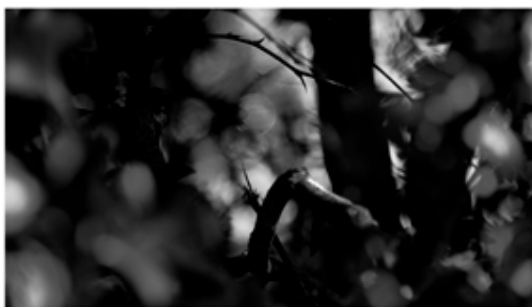
THE INFINITE IDEAL OF WHICH COVERS THE SLIT OF A WOUND



A SOURCE BUBBLES UP ALL THAT IS

Kathleen Rogers, print from the "Matrem" series, 2018, Remembering the Unknown, 2019.

In 2018 I produced the photo series "Home" based on site visits and photographs that include those taken from outside the perimeter of HM Styal Prison for women, the site of my father's former orphanage in Greater Manchester.



CHILDREN

Kathleen Rogers, print from the "Home" series, 2018, Remembering the Unknown, 2019.



The “Home”, Styal photographs were produced on visits to get closer and imagine how my father’s life might have been like within the cottage homes orphanage. The so called, colony was envisaged as a utopian children’s orphanage village set in the open air and in the countryside beyond the established overcrowded workhouse conditions and systems of Manchester. (Stanhope Brown, 1989)



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Kathleen Rogers, print from the “Home” series, 2018, , Remembering the Unknown, 2019.

My father arrived at Styal Orphanage in 1923, having been abandoned with siblings by his mother after her impoverished return alone from Canada. She was a WWI war bride, born in a London Workhouse hospital and later sent to charity schools before going into domestic service. On arriving at around 2 years old my father had suffered extreme malnourishment and had the bone disease Rickets. His sister was sent to Australia as a home child and the family were never reconciled. Life at Styal Cottage homes in the mid-1920s was harsh. Children in institutional situations like these learnt that they could only count on themselves and to trust no-one. My father was visibly marked by bone deformities caused by childhood rickets and was deeply psychologically scarred from his early abandonment experience. He spent his whole childhood and youth there as children were rarely allowed to leave the enclosed community. It was commented that the Styal “home” children were almost mute and had difficulties communicating with outsiders. The militaristic regime and

the endeavour to construct model citizens from orphaned and abandoned children had an overwhelming impact on all the children who had already experienced neglect – it was a harsh regime where everything was done to a schedule - there was no self-directed play - everyone would eat at the same time, with each child carrying out sets of repeated acts and movements according to regulations in states of enforced isolation.

Research into my father's life has been emotionally challenging and difficult – not surprisingly his orphanage experiences and his abandonment were not something he talked about in his life time – my research led to the mystery of his own mother's past. The kinds of early hardship suffered by my grandmother and my father; the lack of warmth and affection and socialisation are known to lead to permanent developmental changes in the fundamental material structures of the body.

I acknowledge that life writing narratives based on subjective accounting of epigenetic causation of intergenerational PTSD can be viewed as controversial but thinking in multi-dimensional ways that trace genetic citizenship as contingent and inseparable from the feeling and sensing cultural mind and using the visual arts can help integrate ways of understanding people's differing responses to traumatic life experiences to creative, compassionate and therapeutic approaches to the universal themes of self-hood, identity and healing.

Further information on this and related work can be found on the website pages Cosmopolitical Futures – The Anthropocenic Human + Projects - [www.kathleenrogers.org](http://www.kathleenrogers.org)

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