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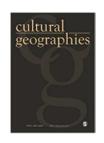
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A shape which represents an eternity of riddles: fractals and scale in the work of Wilson Harris

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Abstract

This paper undertakes a geographical investigation of the potential application of the concept of fractals to Wilson Harris's understanding of the relationships between language and landscape. Alan Riach¹, briefly describing a fractal as "an irregular action or shape, such as a cloud or a coastline...", has famously argued that Harris's poetry and prose (his work notoriously blurs this boundary) "...is caught up by the shifting fractals of political energy on a global stage..."

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Keywords: Fractals; scale; Wilson Harris; environment; aesthetics; materiality

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A shape which represents an eternity of riddles: fractals and scale in the work of Wilson Harris

Introduction

The distinguished career of Wilson Harris as a poet, novelist and literary critic has deservedly received much comment amongst those interested in Caribbean literature³ ^{4 5}. However it is the enduring impact on his writing of Harris's pre-literary background as a hydrographic surveyor who led research expeditions into the Guyanese interior that makes his work particularly interesting in relation to the ongoing dialogue between geography and literary studies.

Harris's formulation of a "living text landscape", which is a recurring element of his work, developed out of this distinctively physical and *mathematical* engagement with landscape:

"As a surveyor one is involved in mathematical disciplines, and astronomy... I sensed, as a surveyor, that the landscape possessed resonance. The landscape possessed a life, because the landscape for me is like an open book, and the alphabet with which one worked was all around me."⁶

In terms of its "living" element, this view of landscape as active rather than passive is very familiar to physical geographers and other earth scientists, who are concerned on a daily basis with geomorphological processes, or the ways in which landscapes change over time. That there has been and continues to be movement in the seemingly still landscape, albeit slow enough to sometimes be appreciable only over millennia – mountains rising, valleys being carved out, continents shifting – is an experience of landscape that is part of the surveyor's trade.

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Harris brings this awareness into his literary writing as a multi-scalar recognition of restlessness that is textual only in a very physical sense. For example, Harris explains that when he goes back to Guyana, he remembers his 1930s boyhood, when he used to go swimming near the Fort in Georgetown. He reflects that by the 1960s the sea had receded in this spot by six or seven feet, so that there was now dry land in the exact place where he used to swim. Hence thirty years later, if he imagines that child swimming in exactly the same place, what he sees is the ghost of a child "swimming in dry land"⁷. For Harris, this moving physical landscape is a "landscape of the imagination": it is a text that can be read by humans who partake in the earth's creativity.

Harris's work could be typified then overall as a career-long meditation on the spatial dynamism of the Caribbean, in both its human and its physical aspects. It combines reflections on ancient Amerindian concepts and language forms (for example the bone flute), which articulate with European, African and Asian postcolonial cultural forms (such as Haitian vodun dance and Greek mythology). However all of these encounters happen *through* a creative literary imagination that Harris insists is integral to the physicality of the landscapes of the Guyanese interior. For this reason Harris extends Jung's concept of "collective unconscious" into the notion of a "universal unconscious", which determinedly combines human and physical, psychic/spiritual and material, in a multi-lingual, multi-script textuality:

"universal unconscious" encompasses living landscapes as well as the human psyche, the implicit eloquence in the shape of rocks, the markings on rocks made by fire and water, messages or hieroglyphs left by ancient cultures. Some

of these hieroglyphs are untranslatable but they are a ceaseless spur to the human imagination to discern priorities to human discourse. The tree that seems voiceless whispers not only in its leaves but within an invisible orchestra or carbon attunement between wood and element. Not to speak of the inner horizons in which is a kind of book in parallel with the growth and decline of civilizations⁸.

This deliberate conjoining of expressions of the human imagination with the shaping of rocks caused by geomorphologic processes, alongside countless elemental and temporal affinities between the physical and the human, speaks of a universe in which spiritual and material, "word and world"⁹ [9 670] are not separate but operate as repetitions or patterning within one shared dynamic. Due to this patterning within complexity – this "shape which represents an eternity of riddles"¹⁰ - I argue that the relationships between human history, aesthetics and corporeality in Harris's work can be understood through the concepts of fractals and scalar abstraction.

This paper undertakes a geographical investigation of the potential application of the concepts of fractals and scalar abstraction to Wilson Harris's vision of connectedness. The paper will begin by exploring the notion of fractals as it is used in geography, specifically in relation to scale and scalar abstraction. In this section fractals will be understood as putting into place a notion of complexity with patterning, which leaves space for both integration and differentiation of the human, the environmental and the aesthetic. It will then offer examples of how scalar abstraction can usefully be deployed in relation to Wilson Harris's work, drawing on and extending Alan Riach's concept of "fractal poetics". The article will conclude with a brief exploration of the possible implications of deepening and extending ongoing dialogues between

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geographical and literary studies, by applying a wider range of geographical concepts to literary works.

Fractals and scaling: an eternity of riddles

The concept of fractals is employed in a range of disciplines and its usage is linked to an engagement with features of the environment that are too unpredictable or ephemeral to be subject to fixed or straightforward rules. For example, Benoit Mandelbrot¹¹ classically introduced fractal geometry through the question "How long is the coast of Britain?" Eglash¹² neatly explains the understanding of fractal geometry that comes out of this question: "Fractals are characterised by the repetition of similar patterns at ever-diminishing scales... If you look at the coastline of a continent... you will see a jagged shape, and if you look at a small piece of that coastline... we continue to see similar jaggedness." It therefore becomes impossible to finally determine the length of the coastline of Britain: fractals reveal an infinite repetition of jaggedness at smaller and smaller scales. Fractals can therefore be understood primarily as a way of revealing and approaching complexity.

In geography fractals have become a way of measuring and recognising scale – scalar abstraction or parameterization¹³. That is to say, in highly complex natural systems that change in shape over time, fractal measurements allow geographers to recognise *repetition* or patterning of similar irregular shapes at closer and closer proximity, within what appears to be a totally unpredictable shifting irregularity. The first point about fractals and scale then, is that in a phenomenon with a fractal dimension (i.e. a degree of self-similarity at a range of scales), whether it be a river network¹⁴ [14] or urban design¹⁵¹⁶, or indeed textile design¹⁷, one is able to perceive similar irregular

patterns repeated almost irrespective of one's proximity to or distance from it: in other words fractals mean that "the spatial behaviour or appearance of a system is largely independent of scale"¹⁸. This scalar self-similarity within a shifting complexity will be important in looking at Harris's work in the next section: Harris describes a complex and dynamic, but fundamentally connected, universe.

In both physical and human geography, scale itself is understood in increasingly relative, rather than absolute terms¹⁹, less as fixed or inevitable and more as produced²⁰ through socio-political, economic or geomorphic processes²¹. The second point about fractals and scale in geography then, is that self-similarity of fractal patterns within a system can therefore allow geographers to engage in exercises of scalar abstraction that can form a basis for investigation of these underlying geomorphological or socio-political processes: "the examination of the fractal dimension is useful for separating scales of variation that might be the result of natural processes"²². It is worth highlighting the caution in this remark: observable fractal patterning is only an indicator of *possible* regularities within dynamic processes that are less easy to observe. There is always room for randomness. As Phillips²³ observes in relation to river networks:

The fractal dimension can be said to derive from fundamental physical properties of fluvial systems only to the extent that randomness is an inherent component of fluvial process-response relationships. Topological or geometric morphometric parameters do not necessarily have direct interpretation in terms of processes or mechanics.

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Again, the *contingency* of scalar relationships must be kept firmly located in the context of the irreducible *complexity* of dynamic processes: the "fractal poetics"²⁴ [1] of Harris's work does not describe a fixed or mechanistic universe.

The third point about fractals is that they can also indicate temporal scales, not just spatial ones: "Fractals can scale along different dimensions, specifically the spatial or geometric but also through time…"²⁵. In other words, one may see self-similar irregular patterns of change if one looks at a time-series of a system with a fractal dimension over a week or over a year or over a century, such as the movement of prices in a stock market; equally one can see self-similar patterning repeated over a range of spatio-temporal scales, as with the growth of cities over time and space²⁶.

Temporal scaling is an important consideration in terms of deploying fractal analyses in literature. There is an established history of using fractals, in terms of repeated patterns over a range of spatial or geometric scales, in visual arts and design, particularly in computer-aided design and simulation²⁷. Beyond this Eglash²⁸ for example, has noted that fractals are an ages-old element of African visual aesthetics, whilst fractals have been identified as an important element of classic European architectural design²⁹. The deployment of fractal approaches in textual, rather than visual, aesthetics calls attention to scaling over time as much as over space. This potentially has several effects: it stimulates non-linear approaches to thematic development; it suggests a range of possibilities for identifying forms of selfsimilarity in narrative form; and it raises intriguing questions about the textual processes that might lead to self-similarity at a range of scales.

The next section briefly draws out illustrations of scalar abstraction from Harris's work, in an attempt to develop some of these issues further, and the conclusion suggests other possible ways forward for using scalar abstraction and other geographical tools in literary studies.

Spatial scaling: body, landscape, aesthetics

In Wilson Harris's³⁰ most recent novel *The Ghost of Memory*, the principal character (who is unnamed) is shot as a terrorist and falls "from a great height" into a painting on a gallery wall. This fallen character converses with Christopher Columbus, another character who comes to see the painting every day, about the role of the unconscious in art and life. Though the premise may sound rather esoteric and ethereal, this remains a very sensual novel about direct connections between the physical, the spiritual and the aesthetic. For example, the main character reflects on his injury in solidly corporeal terms, repeatedly linking the wound in his body with environmental hazards:

"The wound I had received had made me more sensitive than ever, not only to my limbs, back, body, but to millions who had perished instantly in volcanoes and earthquakes. I was a phantom assembly in the canvas of space sharing a knowledge of the devastations of Nature that bring us back to the fleeting origins of creation within/without ourselves."³¹

This passage is illustrative of the insistence on connection in the novel, with a shared capacity for creation and expression that links bodies, environments, and aesthetics in a shared system. Intriguingly this connection points directly beyond the novel itself to the world inhabited by the reader, hinting that not only might the Christopher Columbus in the novel be read as the historical explorer, but also that the unnamed

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character in the novel might be identified with Jean Charles de Menezes, the young Brazilian man who was shot by the police in London in July 2005, after being mistaken for a terrorist suspect:

This remark of his – all the materials one is given to wear – made me conscious all at once of how I had been mistaken for and shot as a terrorist! I had lost my passport and had felt a tide of anxiety rise within me when the armed police approached me. I was South American, Venezuelan/Brazilian. I knew I would be sent away from the City.... I was ridden by anxieties.³²³³³⁴.

This is not of course meant to be taken literally ³⁵: it is a work of the creative imagination. However it does push the reader towards a sense of direct connection with the novel as a work of art, rather than a disinterested sense of spectacle.

From the repetition of this capacity Harris abstracts a distinctly spatial scalar association, which he calls the "ladder of space"³⁶. He pictures this in the novel as a ladder within the painting, stretching between earth and heaven, and which the character climbs to seek "the *height* of a solidity of feelings in Art"³⁷. As the italics suggest, the notion of height is not incidental here, and links to a notion of scale in which height gives a distance that allows a sense of the larger scale, with all its connections laid out in their solidity, in this case the connections between art, environments and living bodies.

In abstracting these spatial scales, Harris employs the artistic work, the natural world and the human body as different positions of proximity and distance from which this capacity can be seen. For example in the artwork, both the spectators and the character in the painting are able to experience this capacity from their different

vantage points: "they (the spectators) stood in the painting on the huge wall in the gallery on which the canvas was laid. I called on them silently to feel what was happening to me – as it was happening to them whether they knew it or not…"³⁸. Again in the physical environment, which is itself inside a painting, both the creatures inhabiting the environment and the narrator experience this shared capacity of indwelling:

ditches sparkling with diamonds that turned into a shining fish... drowning in air. It had jumped to the River but had been caught in a net. It fluttered like a living machine... Such is a work of Art. Caught like me."³⁹

Finally from the vantage point of the living and dying body, Harris explains the importance of being able to understand this capacity, this indwelling of the aesthetic and spiritual in the physical:

We are born and re-born within and beyond ourselves. We may care for our parents when they are ill... But the change that has happened in us means a new orientation in which we become virtually parentless. We need a wider and deeper relationship in which to employ ourselves⁴⁰.

This 'wider and deeper relationship' is not restricted to genetic heritage (with its racialized and essentialised violences), but is found within the relationships of the human body with other bodies (human and animal), with the landscape and with the aesthetic. In turn, these wider relationships, more decisive than they are definitive⁴¹, are revealed in the novel through processes of fractal repetition and their attendant scalar abstractions.

In abstracting such a diverse scalar association it is clear that Harris is not dealing with a realist spatial continuum that might run from local to regional to global for

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example. These scales are not differentiated by physical size necessarily – they do not simply "nest" one inside the other like Russian dolls. This has two implications. First, Harris's vision in *Ghost of Memory* may be seen as scaling across different orders of materiality⁴²⁴³ that associate one with another through the shared universal unconscious that produces this shared capacity. In this sense, though it is saturated with worldliness in its references and implications, this scaling is a pure abstraction: it is created through recognition of the particularity of this shared creative and expressive capacity and the universal unconscious that makes for its repetition. Crucially, it does not assume any other uniformity – the corporeal, the environmental and the aesthetic are not collapsed one into the other. They continue to be diverse and dynamic even though they are connected.

Second, this scalar abstraction need not be understood as subject to the rigid hierarchies for which the concept of scale has often been criticised⁴⁴⁴⁵ – Harris recognises self-similarity between the corporeal, the environmental and the aesthetic as scales at which creative and expressive capacity are experienced, without offering a necessary hierarchy of size or level between them. I want to insist that what I am calling a process of abstraction in Harris's work is nonetheless scalar rather than simply serial, i.e. that Harris is not just noticing similarity in a series of unconnected spheres. When the main character (who shifts continuously between his different states as character in this novel, as figure in a painting, and as a real person shot as a terrorist) experiences the indwelling of creative capacity, he recognises himself as located within landscape, within the aesthetic domain *and* within the domain of the living. Crucially, he is always located within each – it is only their priority, their relative proximity to the individual one might say, that changes. So these relationships

are much more scalar than serial, though dynamically so – the corporeal, the aesthetic and the environmental are nested one within the other, but they shift constantly in terms of which is nested within which.

This shifting prioritisation within a diverse and dynamic universe brings us closer to Riach's⁴⁶ understanding of Harris's "fractal poetics", in which he uses the concept of fractals as a metaphor for the restless creative force in Harris's writing. Riach argues that Harris "...is caught up by the shifting fractals of political energy on a global stage..."⁴⁷. Because of the shape-shifting dynamic of his imagination, Harris's work is able to deal with the multiple landscapes, aesthetics and histories of the Caribbean and beyond, without ever resolving them into one over-riding explanatory dynamic or outcome. The work therefore expresses a constant state of becoming that can elicit fear, but can also be a source of hope: "The ambivalent nature of fractal movement, creating substance and dissolving it, may as easily lead to the presence of actual angels as to the relentless pursuit of the furies"⁴⁸.

It is worth pressing this point slightly further before continuing with the analysis. By talking about Riach's use of fractals as metaphorical, and suggesting that the concept of fractals could be used in relation to scalar patterning within the text, there is of course no intention to suggest that metaphor is either static or outdated. As Riach amply shows here, metaphor is enormously productive, creating meaning through striking transferences, and representing deeper resemblances that vibrate in their unexpected truth⁴⁹. What the present analysis suggests is that when fractals are used as a geographical tool, to identify self-similarity at a range of scales in the novel, they do something *other* (not more) than the metaphorical. To identify scalar relations

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within the novel is ultimately to deploy what might properly be termed a *geographical mode of analysis* in order to recognise patterns that are already present within the text. In this sense, using scalar abstraction in this way is not so much literary as *literal*, in that it brings out the material or "'thingy' reality" of the novel, which is a combination of patterns in the text that we perceive sensually, interacting with the meanings of the words that we more readily understand⁵⁰. In the next section, through an analysis of temporal scaling, this article addresses the well-known metafictional elements of Harris's work, in which the work extends outwards to incorporate the writer and the reader.

Temporal scales: fragments/shifts in the stream of time

In the temporal dimension, Harris's work scales through the temporality of creativity. The structure of *Ghost of Memory* refuses linearity, a simple narrative of beginning to end. So the novel begins with the realisation: "I had been shot. A bullet in my back... I fell from a great height, it seemed, into a painting in a gallery in a great City... *I had been shot because I was deemed to be a terrorist*."⁵¹. Chapter after chapter there are encounters and dialogues, between the character and Christopher Columbus, with Tiresias the blind seer, with a troupe of actors putting on a play that is linked with the painting etc. As a direct result of each of these encounters, the revelation of connection - between the character's wounding and larger massacres, between violence and environmental change for example – is made repeatedly, and then at the end of the book the character experiences the same revelation again, as if for the first time, from a comment made by Christopher Columbus: "This remark of his – the material one is given to wear – made me conscious at once of *how I had been mistaken for and shot as a terrorist*."⁵². This repetitive structure does not stop time in the book – there is a sense of time passing day by day, and ultimately the mounting

frustration of Columbus with these encounters leads sequentially to his destruction of the painting in the final pages – but the repetition makes the linearity of time relatively insignificant in comparison with the eruptions of revelation that come out of dialogue between characters.

This repetitive revelation through interaction between characters links back to some of Harris's earlier literary criticism, in which he says that his characters are to be seen as an ensemble expressing a complex shared capacity – they are "related within a personal capacity which works in a poetic and serial way so that a strange jigsaw is set in motion like a mysterious unity of animal and other substitutes within the person.⁵³. It is in their interaction, time after time, that characters repeatedly reveal the contours or shape of the shared capacity that I am suggesting is the fractal repetition from which Harris abstracts scale. As his nameless character puts it, in the context of Columbus's angry accusation that he is limited⁵⁴: "That is why I seek new shapes – not just for their novelty but as a way of approaching what is insoluble yet may be real. The approach of an open Mind which evolves - if I may so put it through fragments, through shifts, in the stream of time." Each individual is partial in their view of this capacity, "bowled over in the rapids of history"⁵⁵, but through interaction each individual can open up beyond their limitations, and perceive historical shifts that are more subtle than the all-or-nothing sequential movement from one civilisational epoch to the next.

Although the temporality of the narrative reveals the repetitive and non-linear insertion of these encounters and revelations, it is the nested and shifting temporalities of creativity that show their scalar patterning. Within the novel, the nameless

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character understands himself, during a conversation with another character from the painting he is in, as moved by the same creative force that drove the artist who painted him, so that he is capable of influencing the artist's actions in painting him⁵⁶: I knew – as a quantum creature in a quantum creation – that I possessed a peculiar independence and was capable of turning on him and making him paint differently as if I myself were involved in the arts of creation – involved in an involuntary force of the unconscious beyond myself and within myself.
So the moment of creative impulse within the painted character turns back onto the moment of artistic creation through painting, not following it sequentially but connecting with it as self-similarity.

At a larger temporal scale, Harris has described a repetitive tradition of creativity in the writing of novels, in which the same creative impulse writes both the characters and the author. Harris has famously critiqued the literacy of "block functions"⁵⁷ by which people are forced into a narrow range of instrumental ways of reading and writing, linked to the realist narratives of government and productivity. He suggests that there are other forms of creative literacy that draw on the "unpredictable movement of consciousness-in-unconsciousness"⁵⁸, i.e. on the capacity to think beyond these realist narratives to the capacity for universal consciousness. For example, he argues that a writer who is alive to this capacity may find in drafts and redrafts of his/her own work a literacy of the imagination, finding myths that "lie like fossils in the ancient past, that come alive within his (sic) own work so that the substance of tradition…begins to re-enact itself…"⁵⁹.

Beyond this, Harris goes so far as to say that, in a dynamic relationship between scales, this same pattern of creativity as kinship repeats so that "The characters create the writer as well"⁶⁰ (83). Jonestown⁶¹ begins with a letter from the main character, Francisco Bone, to the author, in which Bone commissions Harris to edit the book that he (Bone) has written. Beyond this $Riach^{62}$ tells the story of a lecture given by Harris, in which the novelist says that one of his characters, Aunt Alicia, has torn up his lecture and told him to "Speak out of your vulnerability. Speak from within the resources of your creative experience." The effect of this awareness of connection between writer and characters is a sense of both creator and created having been and still being created by larger creative forces in nature and culture, and this shifting temporality (past and present merging and overlapping) brings a vulnerability to both author and reader, a sharp awareness of being both created and creator, a state of being that is constantly in process within dynamic environmental and cultural systems. Nielsen⁶³, describing these nested and dynamic relationships, in which the creative moment scales outwards and inwards through time, says: "It is not a simple matter of denving "natures" to characters and their authors. With Harris it is, rather, a matter of writing the multiplicity of natures and writing as the production of nature." Creativity in Harris's work is therefore fractal in its irregular and complex temporality; its characters, as well as its author, are constantly and unpredictably redefining the contours and substance of this shared capacity for expression.

On a yet wider temporal scale, Harris discusses cultural practices as a scaled repetition of awareness of connection over hundreds of years and across civilisations. In *The Amerindian Legacy*⁶⁴, Harris discusses the history of conquest that runs through the Americas, arguing that this does not begin with the arrival of Europeans,

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but that the Caribs were also conquerors of the Mayans before them. Harris argues that, as both conquerors and victims of conquest, the Caribs were peculiarly able to recognise at the moment of conquest the "necessary diversity and necessary unity" between people, and that this recognition has the potential to erode the conquistadorial character that has continued to plague humanity. He argues that this awareness of the presence of "alien cultures" within the self manifested itself in a range of cultural activities and reports of supernatural happenings around the time of European conquest:

That new darkness or dawning renascence lay not simply in the ritual morsel of the enemy they devoured or the flute they fashioned from his bone, but from a sudden upsurge of bush-baby spectres which rose out of their cooking pots like wraiths of smoke or sparks of fire.

Harris is clear however that he is not here arguing for the Caribs to be understood as guru ingénues, that stalwart of the European colonial imagination⁶⁵. The Caribs, like the Europeans, were by no means always aware of this unity, so that when the Caribs were all but eradicated, they continued to reproduce conquistadorial themes, becoming mercenaries or policing the jungles on behalf of the Dutch and the English. Harris introduces this "renascence of sensibility" as equally capable of being accessed by all humanity, and as having been accessed by all humanity, at any of a range of temporal scales: the moment around the cooking pot, which is part of the period of established cultural ritual, which is part of the centuries of European colonialism, which is part of a much longer historical period of conquistadorial narratives, which itself is part of the longer period of "the clash of cultures and movements of peoples into the South Americas and the West Indies"⁶⁶.

Harris abstracts this range of temporal scales from the repeated fractal re-emergence of this mode of consciousness, this capacity of the awareness of the other in the self. He begins with "This scale of the native as host consciousness" then reads "back through the shock of place and time for... thresholds of capacity that were latent...an art of subsistence of memory"⁶⁷. He begins with the event of the bush-baby phenomenon, places this in the context of longer lasting cultural practices relevant to the Caribs in particular, such as the bone flute, then places these within a larger temporal scale that includes the enduring importance of cultural practices of vodun dance or hospitality. At each of these temporal scales, these cultural practices manifest this latent capacity for recognising the other in the self. It is by recognising the patterns of the emergence of the other in the self – these fragments or shifts in the stream of time – that creative alternatives to conquistadorial realist narratives can be discovered: "If one polarizes the world dreadfully, the oppressor and the oppressed, then one is no longer in a position to understand who the oppressor is... To understand that, one has to rehearse the implications."68. ie.

Conclusion

This paper has spent some time looking at the ways in which notions of scalar abstraction based on fractals can be deployed in the study of Wilson Harris's work. This is a particular concept of scale, and a wide range of less measurable versions of scale are used routinely within geography⁶⁹. Fractal scaling is used here precisely because of its specificity: it highlights dynamic, shifting relationships, but at the same time insists on a measurable self-similarity. In relation to Harris's work this allows

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one to insist on the *partiality* of self-similarity, that is, to see repetition and connection over time and space without a complete identification that would remove diversity and specificity. For Harris's work, which insists on the necessity of avoiding absolutes *specifically in order to see connections*, this partiality is crucial:

Absolutes, I feel, reinforce partialities until they conceal them from view. This has helped to promote genocides, holocausts. It promotes terrifying divides *we cannot see* between the conscious, the subconscious, the unconscious, between Brain and the Mind of love.⁷⁰

I am suggesting, then, that in deploying fractals and scalar abstraction in this study of literature, the notion of measurability can undergo a kind of "transformation"⁷¹ in which the emphasis is on specificity and limitation in relation to themes. Certainly Harris's training as a surveyor means that these concepts can be demonstrated as explicitly woven into his work as themes, and the writer urges the reader towards this transformation. It might be possible to deploy notions of fractals and scalar abstraction in relation to other writers, particularly in terms of exploring thematic development in non-linear ways, i.e. looking at how each part relates to the whole. Franco Moretti⁷² for example has carried out this kind of work, re-presenting themes from literary history in a range of non-linear forms, such as maps or graphs. In terms of fractals, interesting questions then arise around what might be meant by selfsimilarity, and about the possibility of more direct "translations"⁷³ of the notion of measurability: it might be appropriate to use computerised and mathematical models for example, in order to capture meta-textual processes that might produce various measurable forms of self-similarity. Jerome McGann's⁷⁴ work on digitisation and textuality for example suggests this possibility.

More broadly, this paper makes a contribution to the ongoing dialogue between literature and geography. Geographers have been exploring literature for some years, firstly in appreciation of the ability of creative fiction to eloquently express the experience of place⁷⁵, and more recently in terms of the materialities of what is becoming known as the "text event"⁷⁶, i.e. the located and mobile interactions between writer, text and reader⁷⁷. Equally, students of literature have for some time been very aware of issues around migration, transnationality and globalisation⁷⁸, drawing increasingly on complex spatial theory to explore changing experiences of space and place⁷⁹. This paper suggests that, just as geographers have become aware that closer attention to literary techniques would allow more awareness of form rather than a simplistic focus on content alone, literary studies might be able to usefully deploy a wider range of geographical tools and techniques as it engages increasingly with material concerns, such as environmental change⁸⁰ and the effects of digital worlds on corporeality⁸¹.

The application of geographical concepts to Harris's work is an important staging point in this deepening dialogue because this work insistently challenges the boundaries between the textual and the material, and points repeatedly to the pressing contemporary issues that make it necessary to do so. Ultimately Harris's work has a strong message about the role that the creative literary imagination can play within the world, if it remains alive to its connections with the materialities at the heart of contemporary global catastrophes, such as environmental destruction and global insecurity:

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The destruction of the rainforests of the globe may seem remote to dwellers in

cities. But we need imaginations that are sensitive to inner-city decay and the

lungs of the globe orchestrated into forests and rivers and skies. We need to

build afresh through the brokenness of our world....⁸².

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56	and on securitisation in British development and immigration discourses.