Title:
Chaotics and the Post-Digital in Ciarán Carson's *Exchange Place*

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Abstract:

A variety of critics and theorists have demonstrated how approximations of chaotic principles occur in literary systems and texts. Across disciplines, this set of approaches has emerged concurrently with the arrival of increasingly powerful computing technologies. This paper examines the novel *Exchange Place* by Ciaran Carson, applying Katherine Hayles's concept of 'chaotics' to the text to read for established chaotic features including unpredictability, complex forms, nonlinear relationships and multi-scalar representations. Foregrounding interactions between chaotics as proposed in the 1990s and contemporary post-digital environments, I highlight three distinguishing elements of *Exchange Place*, which are explained and illustrated through close reading, that reflect an evolving, 21st-century chaotics; I've termed these pulsating subjectivity, mercurial body-text, and collective mind. Crucial to this discussion are evolutions in subjectivity in the post-digital age, where bodies and texts have become deeply embedded with, and within, technological networks. The result is a new horizon of textual strategies and effects that privilege network-ecologies of personhood over individuality and coherence; *Exchange Place* is a quintessential illustration of this literary horizon.

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In *Chaos and Order* (1991), Katherine Hayles established the term *chaotics* to signify literary manifestations of chaotic dynamics. Chaos theory, defined narrowly, refers to features of systemic processes that bely the existence of complex and often hidden structures beneath seemingly random and noisy behaviour.[1] In her exploration of chaotics, Hayles differentiates between the science of chaos proper and pervasive phenomena by which dynamics of chaotic systems, or chaotic tendencies, have emerged in other cultural arenas.[2] A variety of critics and theorists have since demonstrated how approximations of chaotic principles occur in literary systems and texts; this has included investigation of a range of thematic and structural elements, where unpredictability, multiple complex forms, and tendencies toward nonlinear relationships and multi-scalar representations feature.[3] Across disciplines, this set of approaches has emerged concurrently with the arrival of increasingly powerful computing technologies, relying in many cases upon mathematical investigations that can only be achieved with the help of computational algorithms. Now networked technologies are becoming, beyond transparent, largely invisible and deeply ingrained in daily lives and the cultural psyche; synchronously, we have become more cognizant and more expressive of complex system dynamics in cultural texts.[4] Humanities scholarship accommodates complexity approaches concerned with applications of computing to humanities texts as data, and those concerned with applications of computing concepts to theoretical readings of texts; the discussion here is most interested in how the latter type is able to express a balance between what Peter Boxall has described as the 'reality of history' in contemporary writing—an attempt to grasp the materiality and texture of the real—and the distance and abstraction of

the post-digital age, in which information is increasingly embedded in material structures, and materials are increasingly embedded in informational ones.[5]

It is in this context that I will discuss the work of Belfast writer Ciaran Carson, particularly his most recent novel *Exchange Place*. In recent decades, Carson has emerged as one of the most inventive of contemporary writers, his unique style of textualising space distinguishing his work within the frames of British/Northern Irish, Irish and postcolonial literatures.[6] However, analysing the informatics aspect of Carson's work requires a thoroughly different sort of critical project, one with roots in both literary and technological theory. This sort of argument will bring to the fore high-tech features of Carson's writing that more traditional approaches have thus far left vague or only partially explored, including the significance of multi-scalar representations of materiality and nonlinear dynamics of textual form. Drawing on concepts from complexity studies, I will explore chaotics in the literary text: negotiations between traditional literary forms and the emergence of complex structures of physical and ecological relationship. Feeding into broader discussions of contemporary identity transformations relative to new and emerging technologies, this approach could be applied to many texts and authors; here I will focus on Carson's fascinating interplay between the post-digital and the chaotic in representing modern subjectivity. Certain structures emerge in the text that, I will argue, are distinguishing features of chaotics in the post-digital era, especially for their intercourse with the informational-material relationship. The major distinctions relevant to Carson that I will designate as chaotic within his textual practice are the elements of pulsating subjectivity, mercurial body-text, and collective mind. Examining these elements will serve to demonstrate ways in which informational networks are reconfiguring textual practice, on the one hand, and on the other, enabling personhood to take new forms, in and out of the literary text.[7]

Pulsating Subjectivity

Carson himself has been vague in discussion of how technology, and particularly digitality, has influenced his work. In an interview with Elmer Kennedy-Andrews in 2009, asked whether and how the "new technological culture" and digital aesthetics may have influenced his poetry, Carson responded, "I don't think about it that much."[1] Yet his work is emphatically post-digital: between 1990 and 2000 Carson wrote dark networks into *Belfast Confetti,* created outward-bound and fantastic virtual environments in *First Language* (1993) and *The Ballad of the HMS Belfast* (1999), tested programmatic order and codes in *Letters from the Alphabet* (1995) and *Opera et Cetera* (1996), created a geometry of nested virtual worlds in *The Star Factory* (1997), and produced multifarious instantiations of all of these methods on smaller scales in other works, either thematically or structurally.[8]

The structure of *Exchange Place* is also defined by networks, with a plot focused largely on a constellation of connections between two men, John Kilfeather and John Kilpatrick. The structure of the novel is a back-and-forth progression, shifting from one John's perspective to that of the other John, and while these men are not ostensibly connected, or so it seems, much of the suspense of the novel draws upon numerous revelations of similarities between them, and revelations that these apparent strangers have not only traveled the same streets, they have somehow known the same friends and owned the same items of clothing. The novel starts out as a search, not a mystery, however. At the start, both men are in search of a book in some form: Kilfeather traverses Belfast in search of a notebook he has lost, as Kilpatrick meanwhile searches Paris for material for a book he intends to write. Coincidentally, or not, both men are also in search of a mutual friend who

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[1] Elmer Kennedy-Andrews, *Ciaran Carson: Critical Essays* (Dublin, IE: Four Courts Press, 2009), p 26.

has gone missing, who is also named John. Throughout the traversals of Belfast and Paris that unfold, there is a building dissolution of each man's sense of identity as each becomes aware of the existence of his seeming *doppelgänger*. This is characterised by fear and flirtation with the feeling, for both men, that 'you are not the man they say you are, you are someone else'—brought home in the end by a revelation that for each man, on a variety of levels, this is true.[9]

 Exchange Place presents a chaotic worldview characterized by a turbulent profusion of perspectives that is also deeply ordered. The text consistently returns to endless amalgamations of bodily as well as conceptual forms and their contents: experience and forms are mutually overlapping. 'Each listener hears a different music,' speaks the main protagonist,

> just as each of us is not only who we think we are, but the person seen and thought into being by others. Eyes staring at one's back. Meeting of glances. We are others in the eyes of others. I am many John Kilfeathers. …. I thought of Dutch painting, colours mixed on a palette, scumbled into one another to become another, and the smell of oil paint entering the brain through the nostrils, down the neural pathways, reconfiguring the dendrite fractals in a fugue of variant and deviation.[10]

Carson's use of the collective "we" in this passage as well as many others throughout the novel is in one sense a way to identify with many perspectives, to suggest a collective humanness that is central to the novel's worldview. Reflection on "we" as a group also serves to create distance, not unlike the almost scientific, mathematical or even medical language toward the end of the passage, describing "a fugue of *variant* and *deviation*" and "*dendrite fractals*" [my emphasis]. In these ways Carson effectively defamiliarises the subject (and the reader) from identity itself, taking a perspective that is both external (the "meeting of glances") and internal (envisioning impulses travelling "down the neural pathways"). The passage takes place both outside and within the body, in which processes of mind and the interior mirror fractal patterns out in the world, among "many John Kilfeathers".[11]

This is the physically shared universe in which, as Ihab Hassan has it, we 'plough the dust of stars; .. bite galaxies in an apple and drink the universe in a glass of rain.'[12] Carson represents a humanity that is thus enmeshed in complex and interconnected, deeply embedded rules. 'Clouds, river deltas, root systems,' he writes,

> coastlines, music, fluid turbulence, the fluctuations of the stock market, the movement of the crowd on a station concourse, raindrops trickling down a windowpane, all follow a pattern. … The assignation that is to us unexpected,… has been … initiated long in advance.[13]

He presents the contemporary moment as rich and networked, overwhelming attention span and imagination with multitudinous presences and states of being that, while appearing random, are ordered and "initiated in advance." And the subject is embedded within this order, unknowing—'like an actor who waits in the wings composing himself to deliver the words composed by another … the part will take him over.'[14]

But, remarkably, subjective absence is equally necessary. In one instance, Carson's disembodied narrator searches for a real location in hyperspace:

> I turn to Google Maps and drag the pegman icon to 41 Rue du Sentier on Street View. A modest shop front in a narrow, empty street, it looks nothing like the house in the book. It bears no name, only the number 41 above the door. The blinds are drawn. As I pan along the street I know I have been here before, in the garment district, walking past window displays of bolts of cloth and tailor's dummies, I would have walked past No. 41 without registering it then. And I get that uncanny feeling sometimes generated by Street View, that one is actually there, a disembodied spirit roving along a street in the here and now, except it is not now, for the Street View photographs are continually outmoded by the present.[15]

This is a virtual experience full of emptiness: the house bears no name, blinds are drawn, surrounding shop windows are filled with tailor's dummies. Likewise, the speaker imagines himself in this space as a roving, 'disembodied spirit,' making it an uninhabited and empty space even in the moment it is experienced. Where here subjectivity is disembodied, elsewhere it is the vacated body: '*Je ne suis rien* ... I am nothing. Nothing but a clear silhouette, this evening, on a café terrace.'[16] Carson's subject might be read as 'flickering',

sharing characteristics of Hayles's *flickering signifier* (the concept itself developed from Lacan's 'floating signifier'), having, like contemporary language, tendencies toward 'unexpected metamorphoses, attenuations, and dispersions' by which the subject oscillates back and forth between states of presence.[17] I would characterise this subject somewhat differently however, to express the presence/absence dynamics in a 'pulsation' rather than 'flickering.' This indicates how, more than simply altering a state of presence, the subject's back-and-forth movement between states is rhythmic, non-random, and has roots in materiality and embodiment that connect it to a larger chaotic experiment.

Profoundly in the post-digital era, embodied selfhood has unraveled. In the noisy age of 'selfies', the concept of a self in critical theory has all but disintegrated, and contemporary space is haunted by absences and simulacra associated with digital disembodiment: avatars, screen names, social media profiles standing in for presence. Subjectivity and identity have become, as Carson has it, 'a clear silhouette.'[18] The blank subject space evokes a defining condition of urban modernity, whereby human beings and human systems operate at increasing distance and remoteness; human being is, now more emphatically than ever, 'a series of correspondences,' back-and-forth exchanges of information.[19] *Exchange Place* fixates upon this aspect of modern subjectivity, employing *doppelgängers*, amnesia, and double identities to demonstrate repeatedly the interchange, and interchangeability, of being. 'Selves' are more likely to manifest as absences, doubles, reproductions, potential impostors, and the possibilities of any or all of these, rather than a single person with a single story. In this novel identity is intricately bound up with information exchange, and both are active, evolving, and diffuse. 'What was my name?' Kilfeather asks. 'Where was I coming from? Where was I going? I was this John, and that John, and the other John, and I was everyone and everything around me.'[20]

The action of the novel follows the linked narratives of two men, who are in an almost literal sense versions of each other, a fact that becomes known to the main protagonist, John Kilfeather, as the novel progresses. Self is presented in complex ways throughout the narrative, as Carson constructs a sort of non-identity for Kilfeather against conditions of expansive diffusion and scale, taking the narrative down 'a veritable rookery of hallways, alleyways and gangways,' where, gliding through the city never more than half-present, he is 'like a revenant from the future.'[21] Interestingly, Carson makes what could be interpreted as the most literal case thus far for a Haylesian posthumanism in this novel. 'When an organism interacts with an object,' he writes,

> be it within body boundaries (for example, pain) or outside of them (for example, a landscape), it creates a narrative. This is true whether the object be perceived in the present moment, or recalled, for the past continues to influence our behaviour. The hippocampus is a vital structure in the mapping of multiple, concurrent stimuli. It receives signals related to activity in all sensory cortices, which arrive indirectly at the end of several projection chains with multiple synapses, and reciprocates signals via backward projections along the same chains. In plain speech, *it is the instrument by which we assemble ourselves*. A human being is a story-telling machine, and the self is a centre of narrative gravity.[22] [my emphasis]

Narrative is, put simply, an exchange of information, and it is the counting and recounting of this information that forms the basis of personhood: Carson proposes that we are the story we tell ourselves. Hayles argues a similar point in *How We Became Posthuman*, describing narrative as 'a kind of textual android created through patterns of assembly and disassembly. There is no natural body to this text, any more than there are natural bodies within the text.'[23] Again, at moments the passage reads almost like a medical text, only Carson goes farther this time to say "a human being is a storytelling machine," a statement that bespeaks a deeply Haylesian posthumanism, its dissolution of human nature linked closely to the function of narrative, a view that storytelling is an unpredictable (read: chaotic) act of information exchange that forms the body/text in equally unpredictable ways.[24] Carson's description of

information travelling within and across bodily boundaries also evokes Norbert Wiener's discussions of cybernetic communications among humans and machines. According to Weiner, behaviour is composed of feedback loops among humans and machines, with outcomes determined by rules ultimately physical, governed by the motion of molecules, but filtered through a thousand microconditions that can't be accounted for, conforming, again, to the model of chaos.[25] In other words, a person is a dynamic system.

It is the illusion of the discrete individual, and simultaneously the illusion of the discrete text, *Exchange Place* chaotically deconstructs. An important element of this deconstruction is the thwarted desire to see oneself coherently, enacted through subjective pulsations, back and forth between internal and external views. Kilfeather daydreams that he can, for instance, like 'a disembodied mental eye or camera lens,… pan round and see myself from different angles … as if I see myself as someone else.'[26] Later, something like this plays out, as Kilfeather and Kilpatrick briefly meet eyes on the streets of Paris, dressed exactly the same, carrying the same briefcase, before one of the pair, 'with the gesture of a magician who has come to the end of his stage act … swept off the hat, made a low bow, and vanished.'[27] The anonymous, other self becomes in this novel a blank or empty subject position into which the reader can project herself, a space in which to perform and interrogate identity, a stage upon which subject can hyperrealistically watch himself. However, thrusting subjectivity onstage is also bound up with a compulsion to frame the self in such a way that forces the subject to cohere, offering some proof of identity. Only by leaving the body can one contemplate selfhood with any distinction.[28] But through the evacuation of the body, the self is (momentarily) lost to the environment, as perspective merges with everything outside:

> I am arrested in an endless moment. I stop. My hands, my lips, my nose, my tongue are tingling. The sensation spreads through my whole body. Now it affects my eyes. As I look at the trees, the grass, the clouds, they exhibit a silent boiling. Everything is quivering and streaming upwards in a kind of ecstasy, the hum of crickets all around

like a buzz of colour corresponding to the sound I hear. My body is vibrating to everything around me.[29]

Converging with the environment is a process both enlightening and overwhelming, its intensity forcing the subject to contract back into the space of character or body, reassembling there. These patterns of subjective expansion and contraction are not unlike the pulsing of a heart, where pulse also means 'signal' or 'impulse': the heart sends material as well as information to surrounding tissues each time it beats. This works similarly to the movement of a flock of starlings, the classic illustration of chaos theory in motion, whereby each small, individual movement of a single bird sends a message to surrounding individuals, which instructs them where to go next.[30] The result is a coherently, unexpectedly unified organism, 'swooping in perfect unison as if orchestrated by telepathy.'[31]

Mercurial Body-Text

It is almost as if selfhood were a casing that one could assume and vacate as one does a suit of clothing, an idea that Carson plays with throughout the novel: '[I]n wearing the suit, … I would think myself into the character of Harland: a kind of method writing, not unlike method acting, where the actor … immerses himself in the part'.[32] But internal immersion disallows the subject from seeing himself coherently—even in assuming the role of another, as it merges with himself—so eventually he will be compelled expand and diffuse outward again, like a substance that can take a variety of forms.

If identity is a costume that can be assumed, it is as much for Carson a soluble envelope, with boundaries constantly dissolving and recondensing—sometimes solid, sometimes liquid. In Carson's text we see what I will call *mercurial body-text*: physical bodies and physical texts continuously take shape, lose shape, bleed into each other and recombine in new forms, as if they were instantiations of a single substance. This corresponds

to the chaotic dynamics of infinite recombination in nature and systems, whereby 'order' appears to arise out of 'chaos'; more accurately, increasing complexity allows for leaps in self-organisation, producing something new.[33] Kilpatrick's book about Paris is an example; he describes it as composed of extracts from other works, in the form of retellings or borrowings, where Kilpatrick turns and returns to Benjamin's *Arcades Project* as a point of reference, a book in which multiplications and bifurcations lead to surprising emergences from unexpected passageways. Benjamin describes these as dreams arising from an underworld; John Kilpatrick, after quoting Benjamin, calls this underworld 'an invisible abyss' beneath his feet, 'dead city layered upon dead city' not unlike the coral reef, and we accompany him as he emerges from it.[34]

Not coincidentally, *The Arcades Project* is a work to which Carson has often alluded, as well as quoting and paraphrasing it, many times in a number of his own books.[35] After its example, *Exchange Place* is a similarly complicated arrangement of numerous voices, including, it seems, Carson's own. That is, the novel reads more than slightly autobiographically: its Belfast narrator is roughly the age Carson was at the time he was writing the book; he carefully describes his taste in clothing which is, incidentally, similar to Carson's own style of dress; he writes as a profession, and a number of other details and statements that bely, at the very least, no attempt to avoid conjecture of some autobiography on Carson's part.[36] The novel continually disrupts any hint of closure by creating concentric circles like this, that frame and reframe the narrative in a repeating, fractal architecture. Curiously, the outer narrative frames the re-reading by Kilfeather, of a book manuscript that he has previously written and recently rediscovered, titled *X+K=Y*; this is the same title as a manuscript that Carson was working on in 2009, but never published.[37] *Exchange Place* presumably features material from this manuscript, or perhaps was even derived from that

manuscript in some form. The fictional manuscript $X+K=Y$, in any case, allegedly comprises selections and paraphrasings from other authors (much like Kilpatrick's book). These selections include one from Irish experimental physicist Fournier d'Albe, who, Kilfeather explains,

> in his book, *Two New Worlds*, published in 1908, proposed a hierarchical clustering model for the structure of the universe which anticipated modern fractal theory. Fournier's fractal was a snowflake pattern consisting of five parts; each of those parts was a miniature copy of that snowflake; those miniature copies were composed of still smaller snowflakes, and so on, in a dizzying blizzard of self-replication. Worlds lay within worlds in nested frequencies.[38]

As is characteristic for Carson, this passage from the novel reads reflexively, serving perhaps as a way of situating $X+K=Y$ in relation to *Exchange Place*, Kilpatrick's book in relation to Benjamin's *Arcades Project* and so forth. Each story contained in the novel is rendered as a sort of nesting frame in a fractal narrative architecture. Particularly in passages like this one, which appear on numerous occasions, Carson fits Gordon Slethaug's characterisation of the 'metachaotic' text, using chaotic systems self-reflexively, the text an occasion to explore chaotic conditions in the natural world, where "worlds lay within worlds."[39] Here as elsewhere, Carson represents experience as turbulent flows of information across varying circuitry: 'Ratlines, S-twists, plaited halyards', story lines and strings of dialogue, communication wires and strands of DNA—immateriality and materiality mutually embedded.[40]

Much of *Exchange Place* is concerned with books, particularly their materiality: purchasing books, book stalls, lifting and touching books, turning pages of manuscript, writing in books and notebooks, packed bookshelves, old books, notebooks shoved between books. Books are continually framed as proof of identity, presence, and personal history. Though the foregrounding of links between book and body is not new, the chaotic text poses new problematics for books as well as bodies. 'The literary corpus,' Hayles writes,

is at once a physical object and a space of representation, a body and a message. Because they have bodies, books and humans have something to lose if they are regarded solely as informational patterns, namely the resistant materiality that has traditionally marked the durable inscription of books no less than it has marked our experiences of living as embodied creatures.[41]

The threat of 'something to lose', borne of the centrality of disembodied data structures and remote networks that, at least on the surface, challenge the integrity of books and bodies, motivates the book to posit its own coherence and the bodied individual to do the same. Kilfeather grounds himself, at the novel's beginning and end, in material space: he is 'John Kilfeather, 41 Elsinore Gardens, Belfast BT15 3FB, Northern Ireland, United Kingdom, Europe, The World.' The novel is bound paradoxically between matching passages, like book covers, repeating the same phrase at the end ('John Kilfeather, 41 Elsinore Gardens, Belfast…')—representing the enclosure and coherence of identity that the protagonist is seeking throughout the book.[42] 'Indeed, some of the notebooks carry my name,' says Kilfeather, 'and my address, as a form of security. A proof of my identity.'[43] The address is a multi-scalar "You are here" point in the text: it provides endpoints within a larger historical narrative, the first instance referencing Kilfeather's childhood (he explains he used to write it in his books as a boy), the latter closing the book on the present, coming full circle: "You are [back] here." And the address is also used to create an orientation in space by isolating a place on the map and binding the individual within it: "You are [contained] here." These points are the centres of gravity that hold the narrative together, and that, according to Carson's characterization, might be considered elements of the self.

Interestingly in this novel, clothing serves a similar purpose. The shape of the body, once perceived to be unproblematically individual, determined the shape of literary textuality; individual subjectivity, as Hayles put it, was 'warranted by the body rather than contained within it.'[44] As the body informs the shape of the text, textuality also reforms the body, again

like a shell, like clothing: 'Yes, said Gordon, what clothes can do for us. *Le style, c'est l'homme…*. I believe the phrase originally referred to literary style, as if we clothe ourselves in language, which I guess we do after a fashion.'[45] The conflation of clothing, fashion, and language is deliberate throughout the novel, with articles of clothing serving to orient the individual to himself, through details of texture and colour as they evoke preference and memory, as well as to serve as a shell or shelter in which the protagonists hide. "Yesterday I was wearing a navy-blue herringbone 1960s Burton suit," says Kilfeather, "with a white linen handkerchief stuffed in the breast pocket, white Oxford shirt with a sky blue stripe, brown knitted silk tie,…. No one really sees that dapper gent, and I proceed through the city unmolested."[46] Anonymity is desirable, in this case at least, and fashion is a defence of the complexity beneath, which is more delicate and powerful at once: "atoms … forged aeons ago in the stars, billions of atoms forming dense thickets of neurons and transmission cables endlessly communicating."[47] Particularly for Carson's attention to books and stories, our attention is drawn to the fact that the text similarly wears the fashion of contemporary storytelling and language, and at the same time contains infinite sublevel interactions that are both timeless and ever-changing relative to the fashions of literature, "literary style" itself.

Between the book covers, so to speak, *Exchange Place* is made up of countless dynamic interactions of countless elements, many of which we have seen before, and will likely see again in Carson's work. The scene of Belfast has been a sort of living backdrop for much of Carson's poetry and prose, nor is his interest in Paris new.[48] But more than this, Carson is known for enacting a routine, irregular repetition of specific items, locations and characters throughout his body of works.[49] In the first ten pages of *Exchange Place*, for example, we are made aware of surveillance ("you never know who might be watching or listening in on you"); we come across a 1950 herringbone suit, the Morning Star pub and

Muriel's bar; we get detail on a Waterman's pen, and meet John Beringer the watchmaker; these are all elements that have been appeared before, multiple times and in a variety of situations and gradations, in others of Carson's books.[50] And these are just a few of what must be hundreds of Carson's repetitions. The associative links that accumulate between these elements over time, within single books and across the works, evoke an expansiveness that exceeds any particular book; Carson's worlds are connected by grammars of links and passageways whereby recurring moments and images across poems and books can and should be followed, like a trail of crumbs, to other stations in his compendium. Of this, Kennedy-Andrews has lightly discussed the technological influences in Carson's poetry, raising a possibility that these links make his poetics analogous to the electronic text; Alan Gillis went farther to interpret Carson's text as a sort of network, an "ecosphere of information" through which, he argues, "Carson's works form a piece."[2] It is certain that each novel and book of poetry or prose represents a conspicuous reordering of characters, props, situations and ideas from earlier books, and in this way Carson seems to, rather than creating a new and discrete narrative each time, add with each text another programme, or way of processing, an existing database of ideas. Or to frame it as a chaotic process, each narrative plays out unpredictably, though each work follows the same rules of repetition and interaction and is composed of same elements.

While modernism and postmodernism brought home the reality that the text has never been unproblematically coherent or discrete, we now face the relative certainty that subjectivity and consciousness itself are offshoots of much larger systemic processes.[51] Technology has provided new insight in this area via computational modelling, but has also complicated our conception of selfhood by supplying prosthetic capacities, limbs and

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[2] Kennedy-Andrews, 2009, p. 247-8. Gillis, p. 256.

intelligences.[52] Practically speaking, human individuality is not entirely real, an idea of which Carson seems especially aware. Even the integrity of the individual body is questionable, with subjects scattered across multifarious time and space realities, patchy and unstable.[53] Placing subjectivity in this light is mildly disorienting, as, Kilfeather finds, you become to yourself unfathomable; 'I looked into the mirror,' he says, 'and wondered … how many thousand other faces lay behind my face.'[54]

A number of strategies are in place to counter this disorientation, for example, the novel is almost obsessively preoccupied with clothing. Numerous passages detail the cut, the pattern, texture, colour and placement of clothing items: 'a burgundy knitted wool tie with a light blue Oxford shirt, navy and tan houndstooth Shetland wool jacket, grey flannels, and Crockett & Jones tan brogues….a blue and yellow paisley silk handkerchief in my breast pocket'.[55] Clothing becomes a code or orientation used to locate and contain the body (and the story; Carson describes the Muji notebook in similar detail). In a sense, clothing supplies a fantasy of closure, an envelope for the immateriality and seemingly infinite connectedness of the body-text. Names, too, are important as soluble containers. For example, the names and physical addresses of online booksellers that Kilfeather uses are provided as a matter of course ('Bookman17' or 'Tgl Harmattan 2, Paris, France'). These details are unembellished, but nevertheless stand out in contrast to the usual remoteness and anonymity of internet commerce; how often do we make a note of the physical address of an online seller?[56] The noting of eBay handles in particular seems to communicate a desire for orientation, despite Carson's fascination with the interchangeability of individuals in the network. He writes,

> He had first come across Modiano some time ago and had since bought four of his books from online French booksellers. Though they all seemed to be versions of each other, he was attracted by their fugue-like repetition of themes and imagery, their evocation of a noir Paris in which the protagonists were endlessly in search of their identities.[57]

It only becomes evident halfway through the second sentence that it is the books, not the booksellers, who 'all seemed to be versions of each other', and indeed Carson's protagonists, too, are potentially all versions of each other. As if in explanation, John Harland, another character in the book, reads aloud from John Donne's 'Meditation XVII',

> All mankind is of one author, and is one volume; when one man dies, one chapter is not torn out of the book, but translated into a better language; … God's hand is in every translation, and his hand shall bind up all our scattered leaves again for that library where every book shall lie open to one another. One John to all the others, said John Harland.

Carson here again links identity explicitly with books, as well with intertextuality and even a sort of interhumanity.[58] The specificity of naming, and the constant giving of names and surnames that occurs throughout the book, are played against the fact that the vast majority of people who appear in the book are named John—a total of nineteen Johns, to be exact. Texts separate, mingle and converge, separate again, the novel's flow intentionally confounding to this effect. 'At a bookstall,' says one John, 'I look over the shoulder of the young man who stands immersed in a book, the reader who was me.'[59]

Collective Mind

Increasingly it is evident that there is an emphatic mutual embeddedness of information and materiality that is perhaps the defining feature of Carson's text. Rhythmic pulsations of posthuman subjectivity, and liquid condensations and diffusions of bodies and texts in space, enact his subject's growing awareness that he is composed of information, his personal narrative a processing system for being, his mind a machine with unfathomably complex interactions occurring at every moment. In *Exchange Place* this is cast in the description of a reef ecosystem,

> one of those vast underwater cities whose fabric is accumulated from the skeletons of its builders: a necropolis which teems with life. Here are massive blocks and towers of

stone, hanging gardens of the most varied hues, purple, emerald and amethyst, which undulate and flicker beautifully in the transparent water. Fishes skim the galleries and avenues like flocks of birds, and the nooks and crannies are populated by a myriad of other species. What can the little seahorse know of this fantastic ecosystem? We cannot know. But we can say that its experience is a microcosm of the ongoing, thousands of years old saga that is the life of a coral reef, and which, like the human brain, we have yet to fully fathom.[60]

Carson's characterisation of the seahorse, tiny individual wandering in the massively interconnected mind, is not so much a body as a part of a body. Rich, intensely diffuse, cerebral, complex, and self-supporting, the reef of the mind (or human experience, depending on how this passage is interpreted) is dimensional—a place—as well as a body composed of bodies—'the skeletons of its builders'—which cannot, and never could, be closed. The reef suggests deep structures of mind—or rather, a deep architecture of many connected minds, a vast collective subjectivity.[61] The individual subject pulses like a neural impulse within this vast and intricate system of which the creative text is a synecdoche. Kilfeather observes in a painting, in 'the splatter the brush had made … Interesting dendrites, he said. Nice axons. You know, the brain. … Clusters, branches, strings of nerve cells interconnected in some kind of fractal pattern, collecting and disseminating streams of information…'[62] This informational environment can take many forms; elsewhere he details a memory of sound sculptures, recalling 'a multitude of convoluted, multicoloured tubes and overlapping metal plates, shifting and swaying kaleidoscopically, somehow taking on the appearance of a tropical landscape', where 'the sound of rainfall on leaves and of waterfalls plunging into chasms mingled with the music [producing] colours and shapes and sounds for which there is no language.'[63] This description suggests a collective, complex organisation comprising environmental interactions at a variety of scales, a textual shift reflecting informational networks that include human and textual pathways. At the same time, Carson's of words like

"landscape" and "chasm" suggest a terrain that is both human and nonhuman, or rather, includes humanity but is not limited to it.

Pulsating subjectivity, mercurial body-text and collective mind are just three ways of discussing the multitude of relationships among data formations and exchange with which, and within which, human beings are increasingly embedded, in the text and outside it. These approaches are as limited as any; as Carson himself points out, 'there is another narrative beyond the one we occupy' which we struggle to fathom, its chaotic structures only comprehensible in retrospect.[64] Carson's text, not just *Exchange Place* but his interlinked body of works, demonstrates how the post-digital goes beyond the poststructural and beyond the postmodern, by casting texts and human beings as highly dynamic systems, paradoxically aware of our own chaotic structures. This situation is only possible in conversation with the world of communication networks.[65] Yet the novel represents communication networks in their most elemental forms—as synapses moving across neural networks, for example—and Carson, in characteristic style, relegates the internet to a non-privileged position, both culturally and personally. The result is a textual and human environment that is newly adventurous; Carson's views are intensely aware of the various ways in which culture attempts to delimit chaos—in clothing, between book covers, as bodies, texts, with language—but these layers of reality are easily traversed, his narrative stepping routinely through their multiple dimensions. This is, perhaps, the thrust of the work: that these fantastical multi-scalar dimensions are both real and imaginatively accessible, and that there are no boundaries, conceptual or otherwise, that the text cannot cross.

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[1] Narrowly defined, chaos theory is the study of complex deterministic nonlinear dynamical systems. To simplify greatly, chaotic systems are understood as such because they operate in seemingly chaotic ways, appearing disorderly, but in fact the outcomes in the system are predetermined by complex interacting responses to underlying structural rules. In practice, this results in nonlinear responses to stimuli, where increasing levels of self-organisation can occur adaptively. See E. Sam Overman, 'The New Science of Management: Chaos and Quantum Theory and Method,' *Journal of Public Administration Research and Theory* 6(1): 75-89.

[2] N. Katherine Hayles, *Chaos and Order: Complex Dynamics in Literature and Science* (Chicago, IL: University of Chicago Press, 1991), p. 7.

[3] Hayles, 1991, p. 7-9. Tom LeClair argued for systems theory as the most appropriate method for analyzing systems fictions in *The Art of Excess: Mastery in Contemporary American Fiction* (Indianapolis, IL: University of Illinois Press, 1989).

[4] See Joost Vervoort, Kasper Kok, Ron van Lammeren and Tom Veldkamp, 'Stepping into Futures: Exploring the Potential of Interactive Media for Participatory Scenarios on Social-ecological Systems' in *Futures* 42 (6): p 604-616.

[5] Peter Boxall, *Twenty-First Century Fiction: A Critical Introduction* (Cambridge: Cambridge University Press, 2013), p. 10-11. I borrow from Kolarevic and others in using 'post-digital' to refer to the present era in which digital technologies become increasingly ubiquitous, transparent, and seamlessly integrated into many spheres of life. Branko Kolarevic, 'Post-Digital Architecture: Towards Integrative Design' in Proceedings from the First International Conference on Critical-Digital (Cambridge, USA: Harvard University School of Design, 2006).

[6] Neal Alexander, *Ciaran Carson: Space, Place, Writing* (Liverpool: Liverpool University Press, 2010). Elmer Kennedy-Andrews, *Ciaran Carson: Critical Essays* (Dublin: Four Courts Press, 2009).

[7] Although chaos theory preceded systems theory, the arrival of systems theory in the more recent past lent new interest and credibility to the topic, as complex systems are newly understood as rich in information rather than poor in order, particularly alongside and in light of new developments in computing technologies; computing systems represent a new area of complex systems that can be manipulated and dissected (Hayles, 1991, p. 6).

[8] See Stan Smith, "Cruising to the Podes: Ciaran Carson's Virtual Realities" in *Ciaran Carson: Critical Essays*, Elmer Kennedy-Andrews (Ed.) (Dublin: Four Courts Press, 2009); see also Elmer Kennedy-Andrews, "Carson, Heaney, and the art of getting lost" in *Ciaran Carson: Critical Essays*, Elmer Kennedy-Andrews (Ed.) (Dublin: Four Courts Press, 2009) p. 247-8.

[9] The men, it turns out, are versions of each other, as well as synechdochal of humanness more broadly: 'I was this John, and that John, and the other John'. Carson, 2012, p. 63-4; p. 198.

[10] Ciaran Carson, *Exchange Place* (Belfast: Blackstaff Press, 2012), p. 128.

[11] Hayles, 1991.

[12] Ihab Hassan,'Maps and Stories: A Brief Meditation' in *The Georgia Review* (2005): p. 753.

[13] Carson, 2012, p. 174-5.

[14] Ibid., p. 172.

[15] Ibid., p. 149-50.

[16] Ibid., p. 42.

[17] Hayles, 1993, p. 76. Relatedly, Smith has described Carson's subject as *ambilocated*, a phrase that suits the displaced and in-between-ness of subjectivity in his text. Stan Smith, *Irish Poetry and the Construction of Modern Identity: Ireland between Fantasy and History* (Dublin: Irish Academic Press, 2005). 'I am a displaced person,' Carson writes. 'I inhabit the interlude between two movements, not knowing for how long. I am in limbo, the borderland between two states of being.' 2012, p. 46.

[18] Carson, 2012, p. 42. On the complete disorientation of the moment, Paul Virilio describes it as "a world in the grip of doubt, … disorientation, in which the markers of position and location are disappearing one by one in the face of progress…. the very notions of scale and physical dimension gradually losing their meaning'. *Open Sky* (London: Verso, 1997), p. 62-3.

[19] Carson, 2012, p. 107.

[20] Ibid., p. 198,

[21] Ibid., p. 38.

[22] Ibid., p. 161.

[23] Hayles, 1999, p. 45.

[24] Ibid., **239:**

> The Internet society enables disembodied community, but it places individuals in relations of interdependence with information machines; it introduces into the landscape of human society a profound bond with machines; it draws attention to the mediation of this bond in a way that deconstructs the modern subject position, undermines the relation of representation to the real, introduces a machine-scape of underdetermined objects, of cultural artifacts with such a degree of plasticity that issues of authorship, canons, authority itself are put into suspension and reconfigured. Far from being an extension of man in McLuhan's sense, the Internet forebodes a reconstruction of the basic elements of human culture.

[25] Regarding Carson's passage, we might imagine, based on his characterization of the "self" as a "centre of gravity", the way an atom looks as a 3D animation, where the routes electrons take surrounding the nucleus are chaotic and infinitely permuting (the narrative) but the nucleus remains central and integral (the self). For more

detail on Wiener's foundations for cybernetic theory, see Norbert Wiener, *The Human Use of Human Beings* (New York: Anchor Books, 1954. org. pub., Boston: Houghton Mifflin, 1950).

[26] Carson, 2012, p. 9.

[27] Ibid., p. 14.

[28] Deleuze and Guattari posit that the subtraction of the unique (individual) from the multiple is the one way to constitute realistic presence, represented as the equation '$n - 1$.' Gilles Deleuze and Felix Guattari (Transl. Brian Massumi), *A Thousand Plateaus* (Minneapolis, MN: University of Minnesota Press, 2004): p. 7.

[29] Carson, 2012, p. 179-80.

[30] Interestingly, Teresa Chay developed 'coexistence theory' based on chaos theory to illuminate the complex dynamics within a single cardiac cell, in which, like the coexistence of water and ice right at melting point, the beating and quiescent states of a single cell can coexist. This reflects the dynamic nature of chaotics in the text as presented here, in which the subject can effectively pulse in two states at once. Teresa Chay and Yinshui Fan, 'Evolution of Periodic States and Chaos in Two Types of Neuronal Models' in *SPIE's 1993 International Symposium on Optics, Imaging, and Instrumentation* (International Society for Optics and Photonics, 1993).

[31] Carson, 2012, p. 53. Carson muses on the beating of a heart:

> I could hear its movements, a coarse-grained rhythmic swash and back-swash as if of surf purling and collapsing on those alien shores .... and I thought of how little we know of what goes on within ourselves, what phantoms wander the uncharted regions of the brain, unknown to ourselves. (p. 96)

[32] Ibid., p. 27.

[33] Eric Charles White, 'Negentropy, Noise and Emancipatory Thought' in Chaos and Order (Ed. N. Katherine Hayles) (Chicago: University of Chicago Press, 1991): p. 264.

[34] Carson, 2012, p. 34-5.

[35] This list includes *The Star Factory, Fishing for Amber, Shamrock Tea*, and a number of Carson's poems. For a discussion, see Jonathan Stainer,'The possibility of nonsectarian futures: emerging disruptive identities of place in the Belfast of Ciaran Carson's *The Star Factory*' in *Environment and Planning D: Society and Space* 23.3 (2005): 373-394.

[36] For an exploration of how Carson's autobiography occurs in-text, see Emily Cuming, 'The Order of Things Past: Ciarán Carson's Autobiographical Bricolage', *Life Writing* 3.1 (2006): 17-39.

[37] See Kennedy-Andrews, 2009, p. 227-260 for a discussion of the manuscript $X + K = Y$.

[38] Carson, 2012, p. 38-9.

[39] Gordon Slethaug, *Beautiful Chaos: Chaos Theory and Metachaotics in Recent American Fiction* (Albany, NY: State University of New York Press, 2000), p. 14-15.

[40] Ciaran Carson, *First Language* (Winston-Salem, USA: Wake Forest University Press): p. 56-59.

[41] Hayles, 1999, p. 29.

[42] Carson, 2012, p. vii; 204-5.

[43] Ibid., p. 17.

[44] Hayles, 1999, p. 27.

[45] Carson, 2012, p. 113.

[46] Carson, 2012, p. 3.

[47] Ibid., p. 198.

[48] Ciaran Carson, *The Pen Friend* (Belfast, UK: Blackstaff, 2009). See also Ciaran Carson, *Until Before After* (Winston-Salem, NC: Wake Forest University Press, 2010) and Ciaran Carson, *The Alexandrine Plan, after Baudelaire, Mallarmé, and Rimbaud* (Loughcrew, IE: Gallery Books, 1998).

[49] For more on this feature of his work, see Alexander, 2010. See also Danielle Barrios, 'Ciaran Carson's Belfast: Redrafting the Destroyed Native Space' in *Nordic Irish Studies* (2011): p. 15-33.

[50] See pages 1-10 of *Exchange Place*.

[51] The brain itself is composed of highly specialised and complex circuitry as well as shifting and evolving matter; in terms of how the brain produces perception, there is only a fraction of which we understand from a physiological perspective. See David Eagleman, *Incognito: The Secret Lives of the Brain* (New York: Pantheon, 2011). Hayles writes,

> In the posthuman view … conscious agency has never been 'in control.' In fact, the very illusion of control bespeaks a fundamental ignorance about the nature of the emergent processes through which consciousness, the organism, and the environment are constituted. Mastery through the exercise of autonomous will is merely the story consciousness tells itself to explain results that actually come about through chaotic dynamics and emergent structures. If, as … feminist critics of science have argued, there is a relation among the desire for mastery, and objectivist account of science, and the imperialist project of subduing nature, than the posthuman offers resources for the construction of another kind of account.

N. Katherine Hayles, *How We Became Posthuman: Virtual bodies in Cybernetics, Literature, and Informatics* (Chicago. IL: University of Chicago Press, 2008), p. 288.

[52] See Norbert Wiener, *Cybernetics or Control and Communication in the Animal and the Machine* (Cambridge, US: MIT press, 1965).

[53] Barrios, 2011, p 21-22.

[54] Carson, 2012, p. 66.

[55] Ibid., p. 3. On the importance of material detail to evoking the reality of history, see Boxall, p. 55.

[56] Carson, 2012, p. 20; p. 116-7.

[57] Ibid., p. 13-4.

[58] Hayles (1999) argues that 'There are … deep connections between the narrator's struggle to maintain control of the narrative and the threat to 'natural' body boundaries posed by the cybernetic paradigm' (p. 23).

[59] Carson, 2012, p. 38.

[60] Carson, 2012, p. 101.

[61] For more on collective intelligence and distributed cognition relative to new technological environments, see Francis Heylighen, *Self-organization in Communicating Groups: The Emergence of Coordination, Shared References and Collective Intelligence* (Berlin: Springer, 2013).

[62] Carson, 2012, p. 57-8.

[63] Ibid., p. 144-5. Here Kilpatrick is describing 'Les Structures Sonores,' sound sculptures created by François and Bernard Baschet in the 1950s, '60s and '70s, as presented in a French documentary of the same name produced in 1961. Bernard Baschet, "Structures Sonores" in *Leonardo* (1968): 393-403.

[64] Ibid., p. 163.

[65] Increased experience with and understanding of technological networks have been highly instrumental in the evolutions, respectively, of chaos theory, systems theory, and cybernetics. For more on the history of chaos in the sciences and its influences on literature, see Hayles, 1991.