MINOLI SALGADO

Nonlinear Dynamics and the Diasporic Imagination

If the criteria of knowledge defining centre and margin change, in a very real sense the structure of knowledge changes as well.¹

THE LITERATURES AND CULTURES of migrancy are invariably complex, contradictory, and unstable, drawing as they do upon a migrant experience that is "structured and open, continuous and interrupted."² And yet the analysis of diasporic migrant flows has until recently been dominated by a monologic discourse of spatial fixity and temporal and geographic linearity. In his analysis of modernity and migrancy, Nikos Papastergiadis has argued that while such a discourse may well have suited the earlier patterns of migrancy when destinations were knowable and journeys were predominantly a one-way enterprise, the increasingly complex flows of migrant movement demand a corresponding paradigm shift from the

linear to the multidirectional. Drawing on chaos theory, he argues that, whereas earlier

[...] movement was generally mapped in linear terms, with clear co-
ordinates between centre and periphery, and definable axial routes,
the current phase can best be described as turbulent, a fluid but struc-
tured movement, with multidirectional and reversible trajectories.³

Papastergiadis is not alone in drawing on the structural and ideological
paradigms of chaotics for evaluating modern migration. Antonio
Benítez–Rojo has used the metaphor of recursive flux to order his
study of Caribbean culture in The Repeating Island,⁴ and Arjun Appa-
durai has argued that modern cultural forms of hybrid identities and
deterritorialisation are “fractally shaped [and ...] polythetically over-
lapping in their coverage of terrestrial space.”⁵ All three cultural critics
use the language and rationale of chaotics as a “bridging concept,”⁶ to
formulate a critical language responsive to the cultural conditions
created by modern migrancy. In their bold and wide-ranging analyses,
chaos theory – and the related science of complexity theory – on the
one hand are analytical tools for understanding a social and cultural
condition, and, on the other, are in their turn expressive of this
condition.

My own analysis is differently angled. Exploring the imaginative
and structural affinities between the emergent sciences of chaos com-
plicity theory and the theoretical and literary paradigms of the dia-
sporic experience, I go on to draw correspondences between key
concepts in the fields of science and postcolonial studies. It will be

³ Nikos Papastergiadis, The Turbulence of Migration: Globalisation, De-
⁴ Antonio Benítez–Rojo, The Repeating Island: The Caribbean and the
Postmodern Perspective, tr. James E. Maraniss (Durham NC: Duke UP,
⁵ Arjun Appadurai, Modernity at Large: Cultural Dimensions of Global-
⁶ Papastergiadis, The Turbulence of Migration, 5.
seen that the fundamental principle of chaos, that of generative disorder, lies at the unstable core of the diasporic experience and has a variety of divergent repercussion in the texts of postcolonial writers. These will be illustrated from the work of Salman Rushdie and Michael Ondaatje. My aim is not simply to present and promote a chaotic reading of the diasporic condition or reflect upon the ways in which complexity manifests itself in migrant culture, but, more specifically, to explore the ways in which chaotics intersects with, and informs, diasporic literary practice and the production of knowledge of diasporic experience. In the process it will be seen that the principles of chaotics – sensitivity to initial conditions (popularly known as ‘the butterfly effect’), generative disorder, nonlinearity, irreversibility, and exponential bifurcation – are not merely a convenient critical paradigm for evaluating diasporic experience, but are systematically embedded within this experience and internal to the logic of the diasporic imagination. Chaotics provides a means of analysing the links between the global and the local in processual and emergent terms. The implications for literary analysts are, in my view, far-reaching. Chaotic readings serve not to regularize but to reveal, and insist on the rich complexity of diasporic texts; they describe a dynamic in which contradictory and conflictual readings become not only possible but also necessary.

The Chaos of Diaspora

Diaspora. To sow, disperse or scatter; a term first used in Deuteronomy to describe the dispersal of the Jews. Diaspore. A native hydrate of aluminium, so named from its strong decrepitation when heated.7

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In this dictionary entry the scientific and the religious converge, aligning the popular notion of the diasporic as a collective dispersal with the notion of disintegration under pressure. This connection between coercion and collectivity lends itself to comparison with the causal language of energy flows found in the physical sciences – a language which can, often unwittingly, influence theorists of diaspora; the correspondence between migrant movement and ‘pressure points’ can be seen, for example, in Robin Cohen’s observation that in enforced migration “there is an inverse relationship between the amount of compulsion involved and the likelihood of anticipatory socialization to the new environment.”

Diasporas are fluid, fluctuating systems determined by energy flows and the pressures of globalization and migrant labour. They interrupt, unsettle, connect with and transform existing cultural formations. They correspond to what the Belgian physicist Ilya Prigogine has described as open systems that exist far from equilibrium and fluctuate non-linearly. Prigogine’s research – concisely outlined by Katherine Hayles in her seminal work on chaotics and literature – reveals how entropic disorder creates new kinds of order, jumping to a new level of order, a moment described as a ‘bifurcation point’, resulting in increasing complexity in the macroscopic world. Chaos is a form of generative disorder that has structural correspondences with the diasporic condition of flow, flux and entropic disintegration, encoded with the power for generative complexity. Thus, in terms of chaotics, the migrant group’s contact with a host community constitutes a temporal and spatial bifurcation point that generates cultural complexity.

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10 See N. Katherine Hayles, “Introduction” to *Chaos and Order*, 13.
and diversity that are irreversible. The creation of hybrid identities is central to this dynamic.

The chaotic model of diaspora draws on what Harriet Hawkins has described as the two central characteristics of chaotic systems: nonlinearity and irreversibility. The first correspondence with nonlinearity is self-evident. Diasporic trajectories are multidirectional and composed of endless motion. As Nikos Papastergiadis has shown, such migrational flows are difficult to trace to a stable, originary point—they replicate chaotic processes in which original causes are hidden and consequences are unpredictable. As will be seen, this rupturing of causality has specific and unpredictable effects in the temporal and spatial configurations of migrant writers. Nonlinearity is also replicated in the lateral cultural transferences found in the intertextual legacy of the migrant artist, in which texts such as Rushdie’s deliberately foreground their dialogic relationship to the work of other writers.

The second characteristic— that of irreversibility— has a more uneasy relationship to diasporic aesthetics and is often problematized and contested by migrant writers. In chaotics, the principle of irreversibility is predicated on Prigogine’s and Stenger’s’ observation that “time can only go forward because an infinite information barrier divides past and present.” For time to go backward, it would require “a massive correlation of information to have [for example] collisions on every level, from subatomic particles to cars on a California freeway to meteorites striking Jupiter, reverse themselves” – every event would have to reverse itself precisely in every detail.

12 Papastergiadis, The Turbulence of Migration, 1.
14 Hayles, Chaos Bound, 98.
Yet a form of temporal reversal is a key feature of the diasporic imagination in its quest for wholeness and connection with the past. While the lived reality of the writer undeniably affirms the violent temporal rupture that migration enforces — “of his present being in a different place from his past”\(^\text{15}\) — this very dislocation creates the conditions for the imaginative desire to negate time, reverse it and enact an endless return to the past. It is as if the irreversible “wholesale transition”\(^\text{16}\) involved in the act of migration and settlement opens up imaginative possibilities for the migrant writer who wishes not so much to reverse time but to step back in time, embarking on a journey or, in the discourse of chaotics, enacting a ‘feedback loop’. It is this impulse that guides Ondaatje’s return to his native land in his travel memoir *Running in the Family*, as he creates the intimate imaginative landscape that allows him to enter into dialogue with his dead father.\(^\text{17}\) In some cases, while the desire for such connection may be strong, no reconciliation is possible, and the migrant writer is unable to overcome imaginatively the information barrier that divides the past from the present. In such cases, the disjuncture marked by spatial and temporal dislocation results in a bifurcated perspective (what Rushdie has described as a “stereoscopic vision”)\(^\text{18}\) such that, as John McLeod has claimed in his critique of Naipaul, “the idea of the home country splits from the experience of returning home.”\(^\text{19}\) This divided perspective results in irreversible ontological instability for the migrant, for whom home (the perceived point of origin) becomes displaced into a condition of possibility located in the future, creating a site of endlessly deferred desire. As Avtar Brah observes, “‘home’ is a mythic space of

\(^{16}\) Hawkins, *Strange Attractors*, 160.
desire in the diasporic imagination. [...] It is a place of no-return even if it is possible to visit the geographical territory that is seen as the place of ‘origin’."20 This uncertainty punctuates the linearity of diasporic writing, creating, as will be seen, spatially transversive texts.

The migrant writer is situated on the edge of cultural exchange and negotiation, experiencing the contingency and crisis of travel and displacement. Migrancy enacts a nonlinear trajectory that, in Paul Gilroy’s formulation, challenges the certainty of “roots” with the contingency of “routes.”21 Drawing on bifurcation theory, which posits that “at each forking the number of possible flow paths doubles,”22 Harriet Hawkins has argued that nonlinearity results in the exponential diversification of language and culture23 – a model analogous to the complex trajectories and subject formations that result from the diasporic encounter. For migrant writers, the crisis of travel involves an act of dislocation that positions them at a point of perpetual emergence – a “phase space”: ie, “a place or instant of transition” of a dynamic system.24 Poised on the edge of order and instability, their work not only reflects but also actively explores the conditions that create wholesale transition, often replicating the structures of chaotics. For example, causality gives way to casualty in Rushdie’s Midnight’s Children, in which small changes in one variable have disproportionately large effects on another. Exponential bifurcation can be found in the digressive narrative form of Midnight’s Children, in which stories multiply exponentially in time – what Rushdie has aptly ascribed to India’s capacity for “non-stop self-generation” in the face of disinte-

23 Hawkins, Strange Attractors, 41.
24 Hawkins, Strange Attractors, 155.
gration — and, in a different form, in the self-conscious use of exaggeration in Michael Ondaatje’s *Running in the Family*, in which each re-telling of a story serves to “swell” the narrative. Finally, dissipative structures, in which disorder generates new forms of order, punctuate Ondaatje’s *In the Skin of a Lion*.

All these literary articulations of the dynamics of chaos and emergence deserve fuller consideration. My aim here is to focus on just one element in the system and reveal its connection to the dynamics of diasporic emergence. By considering the ways in which randomness and accident influence the formal and ideological imperatives of migrant literature, I will reveal some of the implications that these chaotic replications of causality have on formulations of agency and ‘free will’.

**Rushdie and Ondaatje: Textual Chaos**

The work of Salman Rushdie and Michael Ondaatje is symptomatic of the complex diversity of migrant writing, in that it demarcates two very different trajectories of chaotic order. Rushdie’s work follows a totalizing impulse, a desire to “swallow the world.” He draws on a holistic model of action, interaction and reaction, and foregrounds the determinism of cause and effect. *Midnight’s Children* affirms a deductive logic in which apparently random events are framed and given meaning by a larger pre-existing whole. Rushdie repeatedly draws attention to this method of constructing meaning through enforced correspondences and, in exilic reclamation of his former home, locates this method as archetypally ‘Indian’:

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As a people we are obsessed with correspondences. Similarities between this and that, between apparently unconnected things, make us clap our hands delightedly when we find them out. It is a sort of national longing for form – or perhaps an expression of our deep belief that forms lie hidden within reality; that meaning reveals itself only in flashes. Hence our vulnerability to omens.²⁹

This obsession with correspondences is directly linked with the desire to give shape to the past (metafictionally deployed in the ridiculous and overtly random connections made by Saleem in constructing his version of events)³⁰ and predict the future (evident here in the reference to omens). Rushdie’s work reveals the difficulties involved when the nonlinearity of diasporic experience encounters the hegemonic, historicizing, linear logic of cause and effect.

This self-reflexive emphasis on the constructed nature of causality draws on a chaotic model of generative disorder that is both deterministic and unpredictable.³¹ (Saleem’s telepathy is retrospectively inscribed – his predictions are simultaneously historically determined and predictive.) Rushdie’s work highlights the paradox of deterministic chaos, in which action can be seen as both determined and haphazard,³² but does so in order to lay bare the mechanics of chaotics, to expose its complexity and exploit its paradoxes. He is a self-conscious exponent of chaotics whose formulations of generative disorder are, at one level, extrinsic to the events described. “How does newness come into the world?” asks the narrator of The Satanic Verses, “of what fusions, translations, [...] is it made? How does it survive, extreme and dangerous as it is? What compromises, what deals, what betrayals of its secret nature must it make to stave off [...] the exterminating angel? Is birth always a fall?”³³ The question that dominates the novel is thus encoded within the rationale of emergence

²⁹ Rushdie, Midnight’s Children, 300.
³⁰ Rushdie, Midnight’s Children, 279.
³¹ Hawkins, Strange Attractors, 30.
³² Hawkins, Strange Attractors, 114.
and generative disorder, as the birth of a new order is shown to be predicated upon elective but unpredictable change, upon transformative disintegration and collapse. In keeping with this deterministic logic, Rushdie’s novels are overtly schematized – none more so, perhaps, than *The Satanic Verses*, in which the complementarity of the contrastive hybrid identities of the two main characters is inverted in the course of the novel.34

Rushdie’s trajectory thus presents us with a paradoxical model of agency and intentionality, revealing how “the unpredictable and the predetermined unfold together to make everything the way it is.”35 His work is teleologically constrained and follows a dialectical reasoning in which polarized forces (for example, democracy and dictatorship in *Midnight’s Children*; monologic fixity and dialogic instability in *The Satanic Verses*) struggle for supremacy. Yet, in foregrounding the dynamics of power, Rushdie can be seen to reinforce the very logic of difference and duality through which dominant systems gain legitimacy. By reconciling free will with determinism (in the case of Saleem’s telepathy, for instance), chance with fate, Rushdie highlights the constraints rather than the indeterminacy of emergence. This understanding of determinism is in line with the claims of Medd and Haynes, who argue that “apparent indeterminacy is [...] the consequence of epistemological, not [...] ontological limits.” As ‘the butterfly effect’ (in which small causes can have disproportionately large effects) is based on the irrecoverability of the initial conditions (rather than their indeterminacy), “indeterminacy is the consequence of the


While determinism functions as an overarching principle structuring the teleological narrative drive in many of Rushdie’s novels (such as Midnight’s Children, Shame or The Moor’s Last Sigh), generative disorder is explored intrinsically through the creative potential of language. Metaphoric analogy and rich semantic play, evidenced, for example, in the nasal leitmotif in Midnight’s Children, generate the (apparently) spontaneous self-organization of meaning, propelling the narrative onto new levels of order. A chaotic reading of Rushdie’s texts thus foregrounds this paradoxical alignment of historical determinism with linguistic unpredictability that underpins his narrative mode and provides a systemic understanding of the structuration of deterministic emergence and generative disorder in his work.

In contrast to Rushdie’s deterministic, deductive model of chaotic emergence, Michael Ondaatje’s work explores the unpredictability of chaotic systems inductively, presenting the haphazard process of textual creation.\footnote{In interviews, Ondaatje himself has repeatedly drawn attention to the fact that he has no clear sense of direction when writing. See Linda Hutcheon’s interview in Other Solitudes: Canadian Multicultural Fictions (Oxford: Oxford UP, 1999): 196–202, in which he acknowledges that he composes in a “random [...] accidental way [...] going down roads that end up nowhere”; Sam Solecki’s interview in Spider Blues: Essays on Michael Ondaatje (Montreal: Véhicule, 1985): 321–32; and the Salon Interview, http://www.salon1999.com/nov96/ondaatje961118.html.} The ‘slippages’ and ‘shifts’ that are forms of spatial and temporal compression in his work\footnote{Rufus Cook, “‘Imploding Time and Geography’: Narrative Compressions in Michael Ondaatje’s The English Patient,” Journal of Commonwealth Literature 33.2 (1998): 110.} are also bifurcation points that open multidirectional, labyrinthine pathways in which multiple potentiality is explored. A key example of the textual inscription of such multiple potentiality can be found in the lyrical passage describing the
lovemaking of Gianetta and Caravaggio in *In the Skin of a Lion*. Here Ondaatje repeats the opening lines (referring to Caravaggio drinking some milk and Gianetta’s perception of its whiteness) at the end, effectively taking the reader back to the beginning of the scene and thus repeating and erasing the original in a way that projects an experience of simultaneity and multidirectionality. The movement replicates the “virtual transitions” described by Danah Zohar in her presentation of motion at the quantum level, in which “there exist [...] myriad possibilities of countless actualities” such that things “happen simultaneously in every direction at once.” Similarly, when Hana in *The English Patient* dislodges a glass in one country and Kip is shown to simultaneously pick up a fork in another, cause and effect are “replaced by the notion of correlation across gaps in space and time.” Ondaatje’s emphasis on multiple potentiality, temporal simultaneity and spatial contiguity undermines not only a teleological narrative drive but also, in my view, promotes a fluid co-optive notion of ‘free will’ that is at variance with the more deterministic notion of individuated agency found in Rushdie’s texts.

Nonlinearity in Ondaatje’s work thus serves to disrupt and subvert rational explanation. It takes many forms, from disturbance on a spatiotemporal (and ontological) level through to the formal irregularity of line structures in poems such as “Sweet Like a Crow” and “Women Like You” in *Running in the Family* (76–77; 92–94). It can be seen in the interrupted journeys that structure *Running in the Family* and *In the Skin of a Lion*, which do not so much reveal

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43 Ondaatje’s presentation of agency and his mobile structuration of selfhood are discussed in more detail in Salgado, “Complexity and the Migrant Writer,” 99–100.
ruptured linearity as give rise to generative disorder: the nonlinear trajectory of the train journeys of his drunken father and his mother’s search for him in the darkness of the tunnel replicating the former’s turbulent state of mind and the latter’s loss of bearings. It is also evident in his subtle use of prolepsis – or predictive narration – which is used not so much to foreground a deterministic logic and promote suspense (as in Rushdie’s *Midnight’s Children*) as to disturb the causal dynamic and show how the future implodes on the present, creating uncertainty and unpredictability. Whereas Rushdie’s *Midnight’s Children* stresses the way in which small changes in one variable can have disproportionately large effects in another, Ondaatje dispenses with linear paths and instead privileges indeterminate process through the juxtaposition of apparently unconnected events, casting what J. Hillis Miller has described as a “self-generated web.”

This is especially evident in the section “A Fine Romance” in *Running in the Family*. Here key events such as the courtship, wedding and honeymoon of Ondaatje’s parents signpost individual passages in chronological order (subscribing to an evolutionary logic) but are dismantled by the content of these passages themselves. “Courtship,” for example, focuses on the peripatetic romantic trajectories of Mervyn and Doris, whose paths cross, bifurcate and collide again without any clear moment of connection. “April 11, 1932” (the day of the wedding and one signposted again in “Wilpattu”) does not describe the wedding at all but a frustrated journey that preceded it, and in “Honeymoon” unrelated historical events are brought into bizarre juxtaposition (emphasizing the randomness of historical process) and the newly-weds themselves are notably absent. The haphazard

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trajectory delineated by Ondaatje invites the reader to reflect on the unpredictable way in which individuals negotiate and interact with the currents of accident and chance, and make it a wonder that his parents got married at all. This pattern of repeated and random spatiotemporal regression and circumlocution has led Rufus Cook to claim that Ondaatje’s work “evolves backwards.”47 A chaotic reading, however, helps re-situate such nonlinearity in a punctuated (rather than evolutionary) dynamic, in which random connections serve as an attractor for crisis and change.

What is more, this section of the memoir reveals how Running in the Family also foregrounds the uncertainty of initial conditions and the indeterminacy of causal connections by using dates and key events as markers of connective crisis rather than continuity. The reader is propelled into the stochastic and heuristic world of probability, in which meaning is rendered indeterminate, provisional and processual. Ondaatje’s work thus actively invites different readings from the same reader, revealing the way in which interpretation itself is sensitively dependent upon conditions that cannot be readily traced or determined. Hence, unlike Rushdie, whose paradoxical alignment of historical determinism and linguistic unpredictability works in the interests of a dialectical, totalizing teleology, Ondaatje privileges the provisional in order to foreground fragmentation, dispersal and the isolated image or moment, thereby unsettling the possibilities for monumentalizing historical inscription.

Further Trajectories

Through the work of Rushdie and Ondaatje, it is possible to trace two different but interconnected paths followed by writers who have been

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subject to "the turbulence of migration."\(^{48}\) My brief literary analysis has, inevitably, been somewhat reductive, charting the general direction that each writer has taken; each of their texts deserves closer consideration, as each follows its own complex trajectory, expressing different forms of nonlinearity, unpredictability, determinism, iteration and irregularity. Other migrant writers trace other paths. Collectively, they form part of the dynamic continuum of the diaspora which — in its recursive consideration of the rupture of migration and the violence of realignment with new cultural formations — allows us to see how the diaspora itself forms part of a complex system, the evolution of which "cannot be followed in causal detail because such systems are holistic; everything affects everything else."\(^{49}\) This anti-causal mode of analysis dismantles the situated determinism of autonomy and agency by investing it with provisionality of purpose and the unpredictability of historical contingency. As John Berger has succinctly pointed out, "the migrant’s intentionality is permeated by historical necessities of which neither he nor anybody he meets is aware."\(^{50}\) The challenge, it therefore seems, is to relish the opportunities generated by this crisis and to embrace the difficult freedom that such uncertainty grants us.

WORKS CITED


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\(^{48}\) The term is borrowed from Papastergiadis’ *The Turbulence of Migration*.

\(^{49}\) Hawkins, *Strange Attractors*, 160.

\(^{50}\) John Berger, quoted in Papastergiadis, *The Turbulence of Migration*, 21.


—. *In the Skin of a Lion* (London: Picador, 1988).


