

From literary immersion to fission-fusion aesthetics

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In this chapter, Anderson draws on the notion of *fission-fusion*, originally from anthropology and ethology, and develops the concept in relation to literary reading and immersion. The term *fission-fusion* refers to the shifting capacity of all sorts of phenomena (including people, animals, and conceptual systems) to act autonomously or come together in an integrated group, as the situation demands. It is a useful extension and corrective to the notion of distributed cognition. Anderson explores the idea in relation to literature itself and literary engagement, suggesting in the end that immersion is too passive a metaphor for the experience of literary reading and literary aesthetics, and proposes that the fluxing and dynamic nature of fission-fusion is a useful way of thinking about the experience.

Literary immersion

What happens when we become *immersed* in a literary work? Literary immersion is commonly conceived of as ‘a state of forgetting language and losing oneself in the textual world’ (Ryan 2015: 136). Traditional notions are based on an either/or mode of understanding the mind’s engagement: it is *either* in a literary world *or* this one. Yet immersion heightens perceptions of the work, oneself and the world as aspects of the immersive process (Anderson and Iversen 2018). Recent scientific research invites an understanding of mind, self and world as *fission-fusion concepts, entities, and processes* (Anderson 2015a, 2023). Literary experiences, including immersive ones, are fission-fusion phenomena too. This chapter sets out scientific evidence combined with literary examples which illustrate the insights a fission-fusion perspective offers into the nature of literary experiences. Fission-fusion aesthetics has implications for how we do literary analysis and is a means of substantiating the value of literature, as well as helping us reflect on the use of the term *immersion*.

History of the term immersion and recent cognitive theories

The term *immersion* itself demonstrates the fission-fusion nature of concepts across time and cultures. It is entwined with understandings of mind-body-world relations and emerges from experience of moving from one element to another, air to water. Etymologically, the word derives from the Latin *immergere*, to dip, plunge (or merge) into, then begins appearing in fifteenth-century descriptions of baptism, believed to enable access to another world; it is a physical enactment of a spiritual transformation. Beliefs in fusibility and separability of mind and body are borne out of our capacities to think through our bodies and environments *and* for purely intellectual flights. As well as emerging in theological notions of an immortal soul and brain-in-a-vat philosophical thought experiments, ideas about separability are mediated by aesthetic and technological forms of virtualisation. Our fission-fusion mind-body-world capacity enables, and influences understanding of, experiences of literary works, including their immersive qualities.

Renaissance notions of literary immersion emerge amidst wider concerns about human immersion in the world and conversely the extent to which the mind ‘inserts and mingles its own nature with the nature of things’ (Bacon 2000: 19; Anderson 2015a).

That human perceptions of the world are fictional was claimed as far back as Plato, while more recently cyberspace has been described as ‘an extension of our age-old capacity and need to dwell in fiction’ (Nusselder 2009: 53). Fictional literary realms act as supplements to our individual life spans and evolutionary inheritances, and are distinct forms of extension to our more general ‘as if’ stance to reality due to our recognition of literature’s *intentional* fictionality (Anderson 2015b, Anderson and Iversen 2018). These correlations and distinctions between modes of processing factual, counterfactual, and fictional realms provide a foundation for understanding the nature and value of literary experiences, including those thought of as immersive.

While imagining of any world necessarily deploys our understandings of being human in the world and our modes of processing this, such that factual, counterfactual, and fictional realms necessarily overlap and are entwined, this need not lead to positing ‘minimal departure’ (Ryan 2013) – the purpose of fiction is the space for play it opens through divergences as well as continuities. A distinction is that fictional literary works tend to present themselves as fictional (even while framing narratives may simultaneously evoke real-world continuities); this means that a wider range of divergences from our existing reality are less likely to impede imaginative flights, with different genres facilitating ease of immersion in different trajectories. At the same time, because imaginative play is enabled in ongoing ways by readers’ bodies and environments, even when aided by literary works it has constraints. Literature itself highlights these connections and

constraints: in *Richard II* when Bolingbroke's father implores that he uses his imagination as a mediatory measure against grief, Bolingbroke protests as to the limits of the imagination to transform experiences, scathingly asking who can 'wallow naked in December snow / By thinking on fantastic summer's heat?' (Shakespeare 2002: 1.3.298–9).

Fission-fusion recalibrations

The term I have adopted, *fission-fusion*, builds on distributed cognition and critical cultural theories. Distributed cognition is an umbrella term for the various overlapping and sometimes competing theories also frequently termed 4E cognition: embodied, embedded, extended, and enactive cognition (Anderson et al. 2018–20, Newen et al. 2018). 4E accounts of mind have increased awareness of the cognitive roles of embodiment and environments, yet they can also display a naïve optimism, tending to present the distribution of cognition as beneficial and in computational problem-solving terms, rather than realising the extent of the negative aspects and ethical issues that can arise (such as fascist groupthink, devaluation of sentience, systemic regimentation, and merely financial instrumentalisation), or the significance of the capacity for separability and distinctness. The emergence of distributed cognition from classical AI and functionalist concepts of 'the brain as a computer', or the 'mind as abstractable into information processes' (Turing 1950, Clark and Chalmers 1998, Chalmers 2022), is echoed by cultural theories' virtualisation of the mind and self as merely the product of sociocultural forces. Despite this, cultural theories help to foreground anxiety about a fragmentation of self, a sense of lack in representational systems and of loss of access to reality that persist alongside celebratory accounts of human cognitive distribution throughout human history. Fission-fusion encompasses the celebratory and troubled accounts of distributed cognition, and of cognitive, epistemological, and ontological separability and distinctions that emerge conceptually in, and shape the creation and interpretation of, literature (Anderson 2015a, Anderson et al. 2018–20).

Fission-fusion, a scientific term for the division of a nucleus or merging of nuclei, is also used by ethology to describe dynamic social networks that periodically merge together and divide to optimise performance of activities (Aureli et al. 2008). I initially reapplied fission-fusion to cognition, to capture the flexible and shifting nature of the cognitive clusters which constitute features of the mind across a range of temporal and spatial scales (Anderson 2015a), before expanding my use to encompass our understanding of any entity or process (Anderson 2023).

A dynamic multiplicity of factors come together to compose a mind or self at any one point in time, with experience being an evolving array of intermingling constellations, across which consciousnesses play. An instantiation of any entity or process can be composed of aspects of my brain, body,

or the world, and may at times be composed by different constellations of these. So, for example, a constellation of internal and external phenomena may produce an experience of pain, though the particular nature of the composition may only be of import in certain cases, for example, in relation to ethical accountability. Each constellation resonates with or is dissonant to varying degrees with aspects of other entities. Our reformulatory capacity enables ongoing *interconnections* with and *disconnections* from aspects of others and the world. That we are neither merely separated off from one another nor form a continuous amalgam avoids the extreme of our operating either in solipsistic isolation or as an undifferentiated mass.

As with distributed cognition, fission-fusion is not merely epistemological but ontological, pervading the nature of being in the world. Fission-fusion's wider bearing is supported by the affinities it holds with a range of other theories that have arisen across the disciplines in recent decades, including Kimberlé Crenshaw's (1989) 'intersectionality', which emerged from the double marginalisation suffered by black women in legal systems, physicist Karen Barad's (2007) 'agential realism', which highlights the unceasing flux of entities, and Michaela Massimi's (2023) 'perspectival realism' in the field of philosophy of science, which examines the situated nature of our access to reality.

The multidisciplinary and cross-societal evidence for fission-fusion approaches substantiates this new theoretical approach to analysing literary and other art experiences, including immersive ones, and provides a basis for the value of literature and other arts.

Imaginative exercise

To understand what literary works do to our imaginations, we first need to understand the imagination. Try imagining the view from your window without looking out of it, or another scene close by but not in your current gaze range, close your eyes and keep them closed for a few moments. Imaginings tend to morph and mutate as we attempt to feel our way into their details. Now look out the window at chosen scene. Which is more detailed? A presumption that people experience more detail through actual world perceptual forays is a reason often given for imagination's inferiority to real life experience; Hume, for example, describes the imagination as 'weak and imperfect' (1739–40: 1.3.10.10). A rendering of 'imperfect' as unfinished invites another thought experiment. Close your eyes: imagine the view again, but this time consciously alter some aspect of it. Imagining this for most people is easier and faster than changing actual environments, hence this open-ended free play of our capacity to imagine can be beneficial: the ability to imagine the world as other than it is opens up potential for change. Artworks then supplement this special capacity of the imagination through what I have termed 'spooky cognition'.

Case study: spooky cognition in Douglas Dunn's 'Loch Music'

Artworks act as imagination enriching companions rendering us in realms beyond the constraints of our unaided imaginations, by supplementing our prior thoughts, with the experiences and perspectives of other people, places, and times. Our engagements with artworks, as with the world, involve shifting weightings across cognitive constellations rather than the either/or dynamic of conventional notions of immersion. In a poem called 'Loch Music', Douglas Dunn (1981) evokes an imagining of a loch and then a moor that his listening to Bach prompts:

I listen as recorded Bach
 Restates the rhythms of a loch.
 Through blends of dusk and dragonflies
 A music settles on my eyes
 Until I hear the living moors,
 Sunk stones and shadowed conifers,
 And what I hear is what I see,
 A summer night's divinity.
 And I am not administered
 Tonight, but feel my life transferred
 Beyond the realm of where I am
 Into a personal extreme,
 As on my wrist, my eager pulse
 Counts out the blood of someone else.

As Bach's music transports Dunn, he embodies in his blood's beatings Bach's rhythms, a pulsing liberation from the constraints of daily existence. If described merely as immersion in a conventional sense, the implication is that Dunn is transported by Bach, and we by Dunn, to the evoked landscape. However, as Dunn himself writes, Bach's pulse composed into music is translated into Dunn's physical pulse, which then through the poem is translated into our own pulse's rhythms. Both music and poem mediate fission-fusions of conceptual associations and embodied consciousness with those of others manifested in the artworks. This is cognition at a distance, a spooky cognition to which we are so accustomed that we oft are unaware of it: the special human capacity to take intellectual flights through the soaring of our own imaginations and through being borne aloft and metamorphosed by others' aesthetic endeavours. Quantum theory's 'spooky action at a distance' overturns standard physics concepts of 'locality' by positing that previously entangled particles can instantly influence each other regardless of distance (Rauch et al. 2018). Spooky cognition operates across time and space too, as artworks remain open to each unique engagement and simultaneously metamorphose us, through those same underpinning parameters: our capacity to resonate with aspects of other forms of existence, living or

long dead, which is based in the entanglement of the particles that compose our constellations.

This metamorphosis is also analysable on the neurological level. The rich array of associations conjured in your mind as you read the poem were also borne out of your episodic memory. The same neural processes are applied to our own real lives and to imagining. Autobiographical memories enable us not only to recall our past, comprehend the present, and anticipate the future, but also to imagine fictional scenarios (Hassabis et al. 2007, Mullally et al. 2012). In the process the memories are recalibrated, as through their activation in concert with the literary works, a revitalising opening out of the arrays of associations occurs. Our experience of literary works therefore contains aspects particular to ourselves, as well as ones shared with other people. And as our cognitive horizons are thereby widened and made more flexible, enrichment of our imaginations entails enrichment of our selves. The ways in which literature and the arts expand the scope of our experiences in the world through building on our own life experiences and those instantiated in our bodies and environments explain three central puzzles about them: how they can evoke emotional responses and be morally persuasive, while there also remain limitations on what we can imagine (Anderson 2023). Thus, the fission-fusion nature of literary experiences, including immersive ones, are activated by entanglement, cognitive capacities, and – as discussed further in the following sections – specific features of literary works.

Literary language

The question of what constitutes a literary work or literary language has long been a topic of debate; as with the debate around the nature of the mind, I argue that this is due to its polythetic nature. Nonetheless, certain features can be foregrounded as being more pervasive to literary works. In *Uses of Literature* Rita Felski points out that ‘language is not a hurdle to be vaulted over in the pursuit of pleasure, but the essential means of achieving it’ (2008: 63). She continues that: ‘We need only think of those moments when a reader, on opening a book, is drawn in by a cadence of tone, by particular inflections and verbal rhythms, by an irresistible combination of word choice and syntax’ (63). Literary language’s supplementation of our imaginative capacities is evident in distinctions between perceptual processing of mundane versus vivid language. While there is oft a discrepancy between brain regions activated by perception and mental imagery, when imagery is sufficiently rich and detailed, even early regions of activation are activated as they would be by actual perception, creating an iconic image of the absent percept as they would were it present. More generally, a wide array of cognitive scientific research shows that capacities such as motor resonance, mirror neurons, aspects of embodiment, and sociocultural

phenomena enable experiential fusions across people (Anderson 2015b). On the one *hand*, commonalities grounded in shared features of embodiment lead to the easiness with which we can understand clichés. On the other *hand*, differences in bodies and wider environments can lead to diverse concepts, experiences, and readings of world and works. Divergences between our evolutionary and developmental histories and those of others, or between our own past and current states, generate fissions in our sense of what is salient in the world, our selves, and in literary works, with literary works themselves also developing our future perceptions of saliency (Anderson 2022). Daniel Casasanto and Gary Lupyan (2015) use the term ‘ad hoc’ to describe the linguistic conceptual flexibility that accommodates the complexities of word meanings across users and domains; their theory is yet another expression in another discipline of the fission-fusion nature of existence and our understandings of it. Fission-fusion creates a basis for understanding continuities and divergences between our readings of literary works, and the validity and value of both.

Literature itself, as with all our concepts, is a fission-fusion category. Literary works take diverse forms – including oral storytelling, manuscripts, books, audibles, graphic novels, plays, films, and sometimes even games – with which people merge and then emerge with more or less recalibrated beliefs and behaviour. As well as some literary forms using real or substitute physical domains, stylistic devices supplement the kinds of cues oft provided by physical context, taking advantage of their liberation from it. A frequent feature of literary texts, particularly poetic ones, is a recurrent use of *weak* implicatures that cause one to range widely around one’s mind to make sense of a word (Wilson 2011), whereas with the strong implicatures of everyday language one oft lands more immediately on meanings – an example of the latter is saying ‘it is getting cold’ in the context of your being next to an open window (see Pinker 2007).

Hume’s critique of imagining can again be positively recast: qualities of the imagination that are perceived as ‘weak’ are actually its strength, and the imagination’s ability to be *diffuse* and *flickering* in quality is mimicked by literary devices. Our hypotheses of words’ associations accrue a reinvigorated, deepened, and widened conceptual scope through this process too. Weak implicatures also open more space for us to bring our own thoughts and experiences to a poem, while the author via a range of literary devices nudges the reader to the meaning they intend.

The oft polyvalent nature of literary language, which leaves words particularly open to multiple interpretations, assists in widening readers’ conceptual range. To illustrate this, let us try another imaginative exercise. Imagine yourself on a bus journeying into the night, and looking out the window:

On the left, a red light
swims through the dark:

a ship's port lantern.
Two rubber boots show,
illuminated, solemn.
A dog gives one bark. [. . .]

Moonlight as we enter
the New Brunswick woods,
hairy, scratchy, splintery;
moonlight and mist
caught in them like lamb's wool
on bushes in a pasture.

For a minute, like the mist and moonlight caught like lamb's wool in the branches, our minds were caught up by these words, from Elizabeth Bishop's poem 'The Moose' (2010: 153). The evocation of the combined mist and moonlight's qualities through the simile of the lamb's wool caught in trees, render a wondrous experience more substantial, while simultaneously the commonplace is rendered mystical. Both are transfigured in the process regardless of whether they are target or source of poetic comparison. Poetic language oft uses what Elaine Scarry (1999: 89–99) has termed 'rarity', where something rare and nebulous is made more vivid through comparison with something more substantial. In the earlier verse, the seemingly uncanny is revealed to be a commonplace: 'a red light swims through the dark' that is then recognised, rendered more definitely as simply 'a ship's port lantern'. Then more humorously in their incongruity the uncanny returns as 'Two rubber boots show, / illuminated, solemn', on which the only pronouncement is that of the dog's singular bark. Such shiftings of perspective, through literature's immersing us in worlds beyond our lived realities, can help us make a case for its relevance as a mode of decolonising our minds, as discussed in the next section.

Freedom of thought

Through such recalibrations, which expand our capacity to imagine other minds, worlds, and ways of being, literary works widen our degrees of freedom of thought. Without freedom of thought, neither freedom of speech nor of any other kind is possible. Angela Carter describes new modes of fiction, and fiction written as a woman, as modes of 'decolonising our language and our basic habits of thought' by creating 'means of expression for an infinitely greater variety of experience' (1997: 42). This has ethical consequences; rather than merely instructing people how to behave, Carter believed that by 'nudging at the edges of possible experience' fiction can 'reflect' and 'precipitate changes' (1997: 34). She adds that 'the reader is doing a lot of the work, reading a book is in a sense a recreation

of it' (1997: 37). This notion of how fiction can work, by feeling its way into and beyond the edges of the known, and through a collaboration between writer and reader, suggests its ability to contribute to the creation of more critical, creative, and compassionate thinkers. These capacities are necessary in order to engage ethically with ever-evolving ideas and environments and resist the mind-shackling nature of mere observance to current ethical norms.

Aesthetic structures can take us beyond the entrenched narratives instantiated by our contemporary lifeworlds, making new modes of thinking and being possible. This opening out occurs and is evident across the personal and subpersonal levels. It relates to what occurs through social play in the young, which leads to more developed prefrontal cortexes, which are correlated with appropriate behavioural adaptivity, emotional development, creativity, and cognitive flexibility (Bell et al. 2010, Woolston 2021). Social play produces a dopamine surge (Vanderschuren et al. 2016): the significance of the surge in this neuromodulator associated with the brain reward system can be better understood in relation to research that suggests a *distribution* of value. Rather than 'a single mean' being anticipated, a dopamine *array* represents 'multiple future outcomes simultaneously and in parallel', with this weighted probability distribution recalibrated through each successive engagement (Dabney et al. 2020: 671). Combining these neuroscientific studies on social play and on value distribution affords insights into the importance of the diverse modes of playfulness that literature and the arts enable, supporting the intuitions of those working in the arts, such as Theocharis Raptis (2022: 100), who argues that the 'arts undertaken by adults perform the function of play and can prepare people for friendship and for their political and ethical life'. Playfulness is both an aspect of and an outcome of engagement with literary language, as discussed above. Other features such as functional shift lead to the emergence of new word forms, e.g., 'godded' (Shakespeare 1990: 5.3.11); such linguistic creativity, here through noun turned verb, creates new apprehensions of existence. The longer processing times and heightened cognitive activity observed in processing literary language also indicate its recalibrative nature (Davis 2007, Anderson 2018).

Literary works also deepen and strengthen freedom of thought, because they display and immerse us in situations and roles; this includes 'a *library of agencies*' which we can use 'to grow', as C. Thi Nguyen describes in his analysis of game playing (2020: 22). Nyugen presents the developmental potential offered by games as arising through encounters with unfamiliar agential modes and through a conscious narrowing and widening of them: playing immerses us in a 'narrowed evaluative attitude' with a 'narrow goal', which we may then shift out of into a more 'open-ended, sensitive' reflection (2020: 18–19, 221). Scope-narrowing in our real-life roles can be practically helpful to focus behaviours, as Nyugen observes; however it must be combined with 'agential fluidity'; development of the capacity to shift between

self-aware narrowing to more subtle and complex agential modes, he adds, is a potentially positive outcome of gameplaying. A similar flexing between agential modes occurs in our literary fission-fusions, though literary works instead tend to explore the complexities and nuances of multiple value systems operating in concert. Games have fixed rules but are open-ended in terms of the outcomes; the openness in literary works is in the extent of fission-fusion sense-making that emerges via the reader's fleshing out of the literary works. Nyugen (2020: 12) describes 'a special experience of harmony between their abilities and the challenges of the world' as arising in gameplayers; this is comparable with conventional notions of literary immersion as involving a flow state. While flow has long been thought of as a no-thought state (Csikszentmihalyi 1990), it is now argued that flow states combine mastery of the basic practical dimensions and consequent liberation of the mind for more refined and complex engagements with the act in process (Montero 2016, see Currie, this volume). Immersion itself is a fission-fusion category: some forms are merely habitual, providing forms of cognitive shorthand for the performance of certain roles or activities which immediately minimise cognitive effort, and more formulaic works of literature are intellectual equivalents to the variously reassuring or tedious patterns and cycles of repetitive forms of daily life. More usually, a vicarious sense of knowledge and aptitude (sometimes revealed to be misplaced) is offered by a literary work, which enables free play of the reader's imagination as it mentally brings to life the literary work's imaginative scaffolding. Nyugen's (2020: 1–2) description of other art forms as 'recordings' implies their relative passivity, as do conventional notions of literary immersion, yet through their playing out across our minds and selves literary works generate a hybrid liveliness and polyvalency.

Players taking on of game world values Nguyen terms 'value capture', but this phenomenon might better be hybridly termed 'fission-fusion values' since, as with people reading texts, if game roles did not resonate with some aspect of a player's own beliefs and behaviours no engagement would be possible. The rationale for fission-fusion values in gameplaying or literary experience can be developed by considering its relation to the dopamine array research. While repetitive prior experiences instigate rule-following beliefs and behaviour, entrenching the weighting of certain future predictions and narrowing our cognitive range, unexpected and heightened psychological experiences of all kinds, including wonder, joy, surprise, horror, and tragedy, widen our experiential repertoires. On a subpersonal level, art-works generate a reweighting and opening out of our distributed dopamine arrays, enabling more imaginative, complex, and nuanced future predictions without involving the complexities and dangers of real-life encounters with extreme (or cognitively burdensome) phenomena (Anderson 2022). Hence a relatively safe developmental potential is offered by literary works (and gameplaying); this can counteract and supplement adults increasing resistance to imaginary play, which is oft increasingly 'administered' and

co-opted by a mass of assumed roles constraining us into stagnant amalgams. As we have seen, literary techniques catalyse affective, perceptual, and intellectual imaginings beyond our everyday narratives.

These diverse strands of research together substantiate the value of engagement with literature and the arts. Another instance of the ameliorative potential of this fission-fusion dynamic is illustrated by Augusto Boal's (2022) discussion of how actors can make use of emotions by disentangling them from the intense yet narrow sphere of their personal narratives and redeploying them as a source of a character's beliefs and behaviours. Such modes of acting dynamically widen the narrowing of experiential horizons: the entrenching of emotions that occurs through their reiterative circling instead spirals open through the newly recast playing out of the emotional resonances, as not only the actors but also the spectators reverberate with the chords of another's story.

Aesthetics and ethics

Literary immersion is a means of counteracting and enriching our more general immersion in our day-to-day lives, and of developing our ethical capacities through the engaging of our minds and morals in fictional realms. Aesthetics and ethics cannot be collapsed into one another, yet the pulse that enlivens a work rendering it aesthetic rather than boring by its nature has an affective power and tends towards an increasing of cognitive reflection, reach, and flexibility, and this in turn tends to virtue. Thinking beyond the rational, the self, and the human, and moving towards the wider circuits and deeper currents that generate surface-level dynamics, artworks enable us to extend our minds beyond our current reality, to conceive distant and different realities and minds, and so to recognise our own world and selves anew.

Due to our enduringly fission-fusion composition, we have the capacity not only to resonate with aspects of other humans, but also with other living creatures and entities in this and imagined worlds. Richard Powers' *The Overstory*, itself a fission-fusion interweaving of narratives, shifts between attempts to evoke the apprehensions of humans, trees, and other life forms, in the process placing in question the species' chauvinism and narrow parameters conventionally used to define intelligence. He attempts to communicate apprehensions of other forms of intelligence, such as that of an ant colony: 'The colony possesses something; Adam doesn't know what to call it. Purpose. Will. A kind of awareness – something so different from human intelligence that intelligence thinks it's nothing' (Powers 2018: 67). Elsewhere, both through the novel's content and style, we are extended beyond a short-term mentality into the epic span manifested in the temporally and spatially extended lives of forests. This novel speaks to concerns over the limitations of John Rawls' (2005) theory of social justice,

whereby the most fair and just world would be created by a human who does not know their role in it, such as their status or physical characteristics; Mark Rowlands (2008, 2016) extends this to encompass not knowing if one is human or not, while also questioning the social contract's limitations, the calculatory nature of which he argues can tend to zero-sum logic and deception, rather than heart-led love.

The cognitive flexibility that arises from playfulness and engagement with the arts helps to counteract this zero-sum logic and 'us and them' mentality along with our tendency to aggrandise ourselves and our own cultures. Such biases can occur when different cultures encounter one another, across national boundaries, within them, and on a one-to-one level (Nussbaum 2012). Our tendency to prioritise ourselves, or those close to us, above others can be a natural part of being able to survive in the world: such tendencies can be positive, affirming, and necessary, as well as manifesting in destructive ways involving prejudice, repression, and violence. At the same time, for us to exist as human beings at all it is necessary for us to hold on to the continuities that underlie such distinctions – interconnecting us all to each other and to the world. This is not merely metaphorical: just consider the accretion of physical, cultural, and social artefacts and environments that enable you to exist as the human being you are. The fission-fusion nature of our minds and selves can also help us accept or even celebrate our own mortality, given the resonances and regeneration of diverse aspects of ourselves across other people and entities. A vivid literary enactment of this fission-fusion phenomenon occurs in Shakespeare's *Sonnets* (1997). Each sonnet operates as an individually contained poem, as well as being dynamically interrelated to one another, as one self is to others, as words and images reappear across sequences, with their re-emergences igniting a shifting array of associations and indicating the open-natured reading of the work as a whole that is intended. Like 'the concord of well-tuned sounds' each string is 'sweet husband to another' and 'strikes each by each in mutual ordering' ('Sonnet 8'). What is required is the ability to shift between these modes, and literary fission-fusions help us develop awareness of and the capacity to shift our weightings across mind-self-world constellations.

Conclusion

Literature and other artworks of all kinds trace the development of the nature of human minds across time and space, and are part of the process through expressing and generating new ways of thinking and being in the world. Fission-fusion aesthetics is epistemological and ontological: it is based in scientific accounts of the merging and diverging of aspects of mind-self-world across time and space, and it resonates with ideas on the nature of knowledge and identity emerging in cultural theory.

Fission-fusion dynamics arise in the style and content of literary works, and provide a more nuanced mode of analysing our cognitive entanglements with them. Fission-fusion helps us understand how literature works and why it matters through clarifying continuities with and divergences from our processing of real, counterfactual, and literary worlds. Literary engagements offer imaginative scaffolding and alternative agential modes that limber up our dopamine arrays, expanding readers' freedom of thought and cognitive flexibility, while building on more general cognitive speculative stances and readers' embodied and experiential repertoires.

We and artworks are brought into flickering coexistences, at times with an intensity that is necessarily fleeting, and for which the term *immersion* may at times appear too passive, especially given that what is distinctive about our literary and other art experiences is our bringing of them to life and their revitalisation of us in the process. Literature expands our minds in ways that are not always possible to maintain when more caught up in the ongoing flux of our daily lives, with the many demands on attention and immediacy of requirements to function in the world. Nonetheless, literary works widen and deepen our experiential range not only in that moment but also in the future recalling, imagining and playing out of our lives. Disproportionate to the time spent in their vibrant spheres, literary works can act as lodestars amidst our constellations, qualitatively transforming our existences, and rendering them more meaningful and more full of wonder.

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