"His feet lost weight for an instant... "Falling away in science-fiction' Amy Butt

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We stand on made-up ground.

There are no blank slates, no tabula rasa, and so, at the start of any construction project excavations and earth works try to assert ground level, working against the site as it exists which stubbornly refuses to comply with the precise lines of an architectural drawing. Where there were once gaps, crevasses, depressions which fell below the ground line, they are now filled and evened out: the vulgarities of reality smoothed over in preparation for the enactment of a new future.

But the echo of the void remains. The material used to fill the gaps is more porous than the earth around it and however much it might be compacted and compressed; seams of difference exist. These areas of infill remain unsteady, they cannot bear the same loads as the ground which surrounds them. Ribbons of tension run through, fractures which are treacherous and liable to slip.

The areas of infill are referred to as made-up ground.

Made-up ground is unreliable, unstable, unsettling.

All cities stand on made-up ground.

This is a talk about how we touch the ground, the points of contact we make with the places we inhabit. It will follow the traces of vertigo in three sf novels to ask what it might mean to feel the ground slipping and falling away from us.

HIGH RISE

the dimensions of the forty-storey block made his head reel Lowering his eyes to the tiled floor, he steadied himself.

I join Laing as he stands on his balcony in JG Ballard's *High Rise*, removal boxes still to be unpacked, trying to ground himself in the stacked layers of his new high-rise home. He has overbalanced himself, twisting and contorting in an attempt to count the levels above him, to reduce the upswelling of concrete into something measurable. But the receding floor plates resist such casual quantification and he is forced to look away. He seeks comfort in the cool reassurance of the tiled floor but it serves only as a muted echo of the ground far beneath him, rendered insubstantial. The structure of the tower momentarily shifts out of focus, and its absence reveals his true location, precariously suspended in an immense volume of space. To let go of the doorframe, would be to become entirely untethered.

This is the vertiginous delight of science fiction, the thrill of possibility that such momentary strangeness might untether me from the world I think I know. These are heady spaces, fictions which deliberately exaggerate and extrapolate, they drag out our fantasies and fears and make them manifest. As Elizabeth Grosz notes these fictions are rarely an attempt to foresee what will be, but a suggestion of what could be - if we or the world were only a little different. They are a shadow theatre of our hopes and horrors, projected out onto the surfaces of imagined worlds and far-flung futures. / For urban planners Francesca Ansaloni and Miriam Tedeschi, studying the emotional implications of socio-spatial segregation within

One Commercial Street in Aldgate, the world of High Rise provided a way to describe the feelings of social stigma, uneasiness, fear and rage built into being through exclusionary spatial arrangements. They found this fiction helped articulate the impact of accumulative injustices, of the walk past the main entrance, around the corner and past the bins to the 'poor door', of low-quality carpeting, and plastic door handles, of the shame by association which seeps and settles, pain adhering more firmly than the insubstantial surface finishes.

The dimensions of the forty-storey block made his head reel.

/ Laing seeks reassurance from the tiled balcony. As someone who suffers from vertigo, I write myself in alongside him, forced to leave the concert early by the sight of the tiered seating, now sat on the floor of the lobby with my hands bunched into the carpet. It is a physiological response to the parallel lines and vanishing points, the slight miscommunication between inner ear and eye, but this dizziness and loss of balance is also a confrontation, between the frailty of the bodily self, and the implacable demands of the built.

/ If Laing's response is all too familiar, it only serves to make its later absence all the more unnerving. As he peers down from the balcony to contemplate the shattered scene beneath him, the time of a few thin pages later, he is unmoved, solid and steady. If his vertigo was provoked by an awareness of scale and his own insignificance, this numbed state suggests a loss of perspective; relinquishing critical parts of his emotional self, his bodily responses subsumed by the logics of the high-rise. It is state of detachment which speaks to the fear that the scale of the cities we inhabit will irrevocably transform us, that we will not recognize what we have lost.

/ This imaginative movement, the flickering between Laing's High Rise and the cities I occupy, the transposition of worlds, is what Darko Suvin might identify as the defining feature of sf. Suvin extols the cognitive estrangement of sf, its ability to remove us from the everyday, to create a distance which allows us to look back at our lives in the light of fresh strangeness. For Suvin the mirror held up to reality by science fiction is 'a crucible', it does not reflect the world as it is, but a world transformed, a space where understandings of reality can be reforged. / As described by sf author Samuel Delaney the fictive world is set up against, alongside, and in between the ground of the real. It can act as a seam of difference which troubles the surface, unsettling and breaking the made-up ground on which we think we stand.

BROWN GIRL IN THE RING

I can't tell top from bottom no more fall off the earth into that forever sky

I, slowly, carefully, wind my way down from the high rise balcony, down to ground level to join Ti-Jeanne in Nalo Hopkinson's *Brown Girl in The Ring*. The structure which looms over her is the CN observation tower, still standing in this near future Toronto although government and support services have withdrawn from downtown, a communications tower built on railway profits it is both symbol and mechanism for connections now severed, the city center cut adrift. But the tower remains, tapering to a needle-sharp point which suggests it continues up further, a filament puncturing firmament. For Ti-Jeanne, on the streets below, the height of the tower seems to warp and distort space, bending to draw her in and up. It is balanced precariously on a tipping pint of perception, it

will crash down to crush her, and lift her from the ground to fall into the heights above. Gravity cannot be relied upon and she must hold herself steady while the world twists.

fall off the earth into that forever sky

While the municipal powers of Toronto have withdrawn, the symbolic potency of the tower lingers. As a structure which can be used to imply technologies of construction and social organization the tower is a popular trope in science fiction, and in their analysis of sf representations of urban verticality, Lucy Hewitt and Stephen Graham note that "the vertical implies hierarchy; deployed in spatial terms the vertical highlights and concretises inequities." / They look at the work of William Gibson, H.G. Wells and J.G. Ballard and suggest that these fictions provide critical ground to examine "uneven social geographies of vertical mobility" and resist the entrenchment of economic segregation. The gang boss who now occupies the CN tower revels in the power of the pinnacle, the way it contorts the ground level lives below him. Ti-Jeanne's vertiginous encounter can serve as evidence of this influence but perhaps it is also a lens through which all becomes slippery and unsettled. Written in concrete yes, but not yet concretized.

I can't tell top from bottom no more.

/ Just as Laing returns to the balcony, so Ti-Jeanne returns to the tower. She is forced into confrontation with the malevolent violence of the gang boss manipulating the life worlds of her kin. His power and position seem unassailable, but she is able to draw upon this moment of vertiginous unsettling, a bodily understanding carried in pulsing blood and swirling vestibular fluids, it resonates with the teachings of her grandmother, that the world can be felt and known otherwise. She works to consciously re-imagine the CN Tower, to reinterpret it as a point of connection which extends beyond the imaginations of railway

magnates and communications services, to touch the edges of other worlds. Once it is seen as a sprit-tree, the tower has always been one, and she can call on the dead through foundational roots buried deep, and provide a bridge for the ancestors high in the heavens. Not a resisting of the power held by the tower but a subverting of its purpose, twisting the ways it can be read into being.

/ Her experience of vertigo drags the moment of cognitive estrangement into the fiction with her, and places it within her control. For a fleeting moment she sees the familiar world made strange, the gravitational pull of grounded reality releases its hold on her, and she might fall off this earth. In its wake the memory lingers, suggesting that such a moment might come again, that she might call into being this deeper strangeness. As described by Tom Moylan, these moments of cognitive estrangement can be an "empowering escape to a different way of thinking about, and possibly of being in, the world". For Ti-Jeanne, the feelings of vertigo were a sf-nal experience within a sf novel, a moment where the multiple possibilities inherent within the built were simultaneously present, overlaid on top of one another, and there to be called upon again when she needs to rewrite the world, createing an opening into other ways of being.

A DOOR INTO OCEAN

it could not be 'land'

His feet lost weight for an instant

I join Spinel at the moment of his arrival on Shora, an ocean world entirely without land, in Joan Sloncheski's *A Door Into Ocean*. Spinel is an apprentice stone carver from another planet, his reality founded on the solid weight and heft of seams of stone beneath him, carried

and held in his father's calloused hands. He has ventured to Shora to find another way of being, perhaps only possible for him in this other world. He steps from the craft which has carried him here, onto one of the rafts which drift across Shora's ocean, and the presumption of ground beneath him falls away. What was understood to be solid is transformed into surface, a platform hovering over a great void, haunted by the depth of the ocean underneath. The fact of the ground, previously so universally present as to be utterly unremarkable, is now palpably absent.

His feet lost weight for an instant

/ Without the height of the tower, Spinel's experience of vertigo is provoked by the depths beneath him. But the fear of falling is shared, of being cut loose - as Ti-Jeanne might fall upwards into the forever sky, and Laing out into the immensity of open space, so Spinel stands suspended - lost without the certainty of land to define himself against. The abrupt shift in sensation has momentarily untethered his sense of self and he is dislocated without the stable ground to provide a point of reference. As described by Joyce Davidson the panic of vertigo can be "experienced as an unbearable attack on one's sense of self in space, constituting an unmitigated existential threat." Spinel must remake himself, redefined in relation to the landscapes of this new world, shaped by the knowledge that this too is only one ground amongst many. / Constance Classen notes in his study of haptics, that focusing on where body and the landscape meet, where we touch the surface, is a way to talk about how a place feels, providing opportunity to "foreground sensations that have customarily been understood to be so basic to bodily existence that they have been taken for granted." it could not be 'land'

/ The rafts he steps onto are not a surface but a thickness; mounds which swell with gas, mosses which sink under pressure, small pools of water which sit in the hollows. They blur the line between structure and sea in an indistinct and uneven gradation. They are worn down by weather, breaking apart under the pressures of ocean swells or accreting into new forms. An avowedly eco-topian fiction, it is one that nonetheless recognises complex networks of interconnected relations. / As detailed by Lisa Garforth scientific and science fictional narratives of environmentalism are intimately entangled, suggesting that sf might be an accessible point for engagement with complex systems, a critical space to confront the implications of our actions and their iniquitous impact. Here we can occupy the unfeasibly long and incomprehensibly vast, to begin to contemplate the startling immensity and complexity of our place within the world.

/ These fictions hint at potential of radical shifts in perspective, be that the dramatic vista of a world transformed or the subtle subversion of flipped orientation. They speak to the power of retelling the world otherwise, a way to grapple with what is and what we hope it could be. In Emergent Strategy, adrienne maree brown describes how science fiction can act as a site to radically challenge pre-existing conceptions of the world and powerfully undertake the work of imagining alternatives, "a way to practice the future together." / This capacity for sf to inspire and ferment change is celebrated by Angelika Bammer and Walidah Imarisha for whom science fiction is both a responsibility and a right, a site to "dream as ourselves." It is here that we might liberate the imagination and gather the resolve to sculpt reality. / Just as Ti-Jeanne experience of vertigo suggested that the world could exist otherwise, so Spinel's first steps onto the raft ask him to remake himself in order to dwell within this vertiginous alterity, to learn new ways of walking across the landscapes of strangeness. There is much to be gained from feeling the ground beneath us fall away.