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Collisions, Design and The Swerve

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> I had come to the conclusion that there was nothing sacred about myself or about any human being, that we were all machines, doomed to collide and collide and collide. For want of anything better to do, we became fans of collisions.
>
> Kurt Vonnegut, *Breakfast of Champions*

1. Opening Remarks

To say that this paper is about design and philosophy is a little limiting, if true. In fact, it is about many things as it takes in science and literature too. This 'about' should be read not simply as 'focus' but as 'turning around', as a vortex rushes about its axis. These topics—design and philosophy, among the others—produce moments, affects, from the forces that turn around them. They are also the trajectories of these affects, these acts, fleeing in many directions at different speeds and slownesses. An exercise in what Félix Guattari calls 'transversality' (1984b)—which Gary Genosko explains as 'productively presentational and transdisciplinary' (Genosko 2002: 68)—this paper will take these different topics and push them slightly into collision with each other. This is done not only to see what happens, but also to shine a light on the concept of the collision. The language used so far here is infused with philosophical referents: Spinoza's affect, Lucretius's swerve and collision, Guattari's

transversality; and each one of these has its own connections that bring them into contact with other philosophers, and concepts, as yet not mentioned but lurking: Deleuze and Serres, Foucault and Flusser, order and chaos, complexity and creativity. Any work is already many works pitched from places that while singular are connected, layered and manifold; and these complex *millefueilles* are themselves not only in the middle of current thinking, but also of millennia of historical thought and unfathomable æons of thought to come. Such is the way of all creative acts. And such it is that we will argue that they should be using some of the philosophical modes of creating already mentioned. We seek to position all of these not as transcendent, ideal forms towards which all creativity should point, but as expressions of ways of being creative that are immanent to all. These few particles of creative production we will let fall through this chapter, and introduce a swerve at a small angle of declension that will lead to collisions. This swerve is The Swerve, Lucretius's *Clinamen*. It is the point of this chapter and the condition of its existence. And design, what about design? We will see design as a collision, as well as in need of colliding. We will offer The Swerve as a principle of designing that ensures its collision, and a number of particles of thought and practice that we will set on collision course with each other in order to see where and how design's own ontologies might be constructed.

2. Lucretius, Serres and the *Clinamen*

Philosopher Michel Serres highlights, ceaselessly, in his work on Lucretius's *De Rerum Natura*,[1] the creative power of the *clinamen*. In fact, the swerve that the *clinamen* introduces to nature is the condition of all its (nature's) creativity. If the laminar fall of atoms—that

1 We have consulted two English translations of Lucretius's text, one as prose by R. E. Latham (a translation revised in 1994 of his original work of 1951) and another more recent translation into poetry by A. E. Stallings (2007).

describes the background condition of nature for Lucretius and some of the atomists who preceded him—has nothing to disturb it, there would be nothing more than this fall, this equilibrium, this *stasis*: the same for eternity. 'Nothing can happen,' Serres writes, 'nothing is produced, in a homogenous field' (Serres 2000: 33); and again: 'If we had only the principle of identity, we would be mute, motionless, passive, and the world would have no existence: nothing new under the sun of sameness' (Serres 2000: 21). It is only with the swerve in the fall of atoms—a movement introduced as a minimum angle of deviation from the norm by the *clinamen*—do we get things, stuff clumping in new ways, sometimes only momentary coagulations of turbulent, self-organising systems that dissipate almost as soon as they appear. 'For something to exist rather than nothing, there must be a fluctuation in this uniform flow, there must be a deviation from equilibrium. And this is the *clinamen*' (Serres 2000: 148). Deviation from uniformity and equilibrium leads to collisions, and collisions produce things. In an essay called '*Incerto tempore incertique locis*. The logic of the clinamen and the Birth of Physics', Literature scholar Hanjo Berressem (2005) locates discussions of the *clinamen* 'in recent theory with the entry of chance into an ordered universe and the subsequent breakup of order and chaos into a universe lodged between the probable and the exceptional' (Berressem 2005: 61). Berressem's essay, which purports to establish an 'intelligent materialism' following the *clinamen* through Serres (2000) and Deleuze (2004), is itself a selection of atomistic moments[2] falling through intellectual space and knocked into creative clumps. The positioning of a universe between 'probable and exceptional'—in a region and attitude of complexity[3]—is key in realigning physics (and all

2 Some are named as 'Lacan', 'Derrida' and 'Foucault', along with the main protagonists; others include more general literary and scientific thoughts along with the philosophical.

3 See the work of Stuart Kauffman (1993 and 2008) for a biologist's take on complexity of life, and Brassett (2013 and 2015) for a way of relating Kauffman and Deleuze to innovation and design. Serres's work

science) as a practical *natural* philosophy even at its most speculative and metaphysical, not only for Berressem following Lucretius and Serres, but for Deleuze too (2004: 303).

Even if there were nothing else (and there is, as we will discuss in a moment), Lucretius's *clinamen* gives those of us working in design—and other practices that can be brought under the auspices of creativity—a way of acting to maximise creative affect. As such, *to swerve* might act as an imperative that has both ethical and ontological import. This is because to consider whether, where or how we might be swerved from well-worn tracks of behaviour to have collisions that increase the possibilities of new creative clusters forming, necessitates the alignment of our systems (personal, organisational, and so on) as open and with increased opportunities for affecting and being affected. For Serres whether a system is open or closed is key for determining its creative or entropic nature. This is most explicitly discussed in his essay 'The Origin of Language. Biology, Information Theory, and Thermodynamics' (1982), but is conveyed with some marvellous poetic flourishes in *The Birth of Physics* (2000). For example, he writes: 'The laboratory, and every closed system, protects from turbulence' (Serres 2000: 68; translation modified)—and it is with turbulence, occasioned by the *clinamen*, that we create. 'The old closed systems,' he continues a few lines later, 'are abstractions or ideals. The time for openness has arrived' (Serres 2000: 68). 'Has arrived' with Lucretius, writing in Rome in the last century BCE, but also with Epicurus teaching much earlier (Greece, 341–270 BCE), and 'us' at the end of the twentieth, beginning of the twenty-first centuries. These times for the swerve to act, for openness to arrive and complexity to drift across as many disciplines, thoughts and practices as possible, have

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is, of course, steeped in this complex space, with turbulence an 'intermittent state' between order and disorder (Serres 1995: 109). As is that of Nobel Prize for Chemistry winner Ilya Prigogine and philosopher of science Isabelle Stengers (see: Prigogine 1980; Prigogine and Stengers 1982 and 1985; Stengers 1997a and 1997b). We shall return to this issue below.

always been, and will always be. We are Greek, Roman, and whatever will exist when the stars go out, and all points in between, swerving and colliding. Serres in 'The Origin of Language' writes:

> And experience shows that there is no flux without eddy, no laminar flow which does not become turbulent. Now, and here is the crux of the matter, all times converge in this temporary knot: the drift of entropy or the irreversible thermal flow, wear and aging, the exhaustion of initial redundancy, time which turns back on feedback rings or the quasi-stability of eddies, the conservative invariance of genetic nuclei, the permanence of a form, the erratic blinking of aleatory mutations, the implacable filtering out of all non-viable elements, the local flow upstream toward negentropic islands—refuse, recycling, memory, increase in complexities. (Serres 1982: 75)

The emphasising of the negentropic upheaval of creative production from the eternal and universal drag of entropy is one of the most important aspects of Serres's work. The same is given a more artistic spin by philosopher Vilém Flusser, in a short essay on habit, which he gives as 'the aesthetic equivalent of "entropy"' (Flusser 2002b: 53).

2.1. Æsthetics, Anæsthetics and Critical Decision-making

Here Flusser writes of habit as the tendency of the new to become probable, and that 'everything that is new is terrible, not because of what it is, but because it is new' (2002b: 51). An echo of Lucretius's lines:

> The roving stars, the moon, the sun's light, brilliant and sublime—
> Imagine if these were shown to men now for the first time,
> Suddenly and with no warning. What could be declared
> More wondrous than these miracles no one had before dared

> Believe could even exist? Nothing. Nothing could be quite
>
> As remarkable as this, so wondrous would be the sight.
>
> Now, however, people hardly bother to lift their eyes
>
> To the glittering heavens, they are so accustomed to the skies.
>
> That's why you should let go of any terror of the new. (Lucretius 2007: 67; 2:1031–1040)[4]

Flusser's aim in his short essay is to provide a way of considering aesthetic critique from the mixing of different types of philosophical, scientific and literary evaluation:

> everything aesthetic begins as a terrifying enormous noise ('big bang'), and as it grows habitual ('redundant') it ends in a quiet whisper (whimper). Thus one succeeds not only in making objectivity coincide with subjectivity, the sciences of nature with the sciences of culture, but even Eliot with Rilke. (Flusser 2002b: 53)

Habit anaesthetises and aesthetics terrifies with its newness. And so even in the inexorable flow of all things to habitual, probable, numbness there are opportunities for 'islands' of creativity to emerge, even if they are terrible. Lucretius's entreaty to 'let go of any terror of the new' (*desine qua propter novitate exterritus ipsa*) we will read not as requiring terror to be blunted, but that the terror of the new should not be feared. To be open to the new, even if it causes such strong sensations as to be feared, is to remove the constraints of habit, of closed-minded dogma, and to deliver a system up to the possibilities that there are ways out of entropic fall. But Lucretius also wants us not to remain numb to the wonder of the

4 The prose translation is as follows: 'If all the sights were now displayed to mortal view for the first time by a swift unforeseen revelation, what miracle could be recounted greater than this? What would men before the revelation have been less prone to conceive as possible? Nothing, surely. So marvellous would be that sight—a sight which no one now, you will admit, thinks worthy of an upward glance into the luminous regions of the sky. So has satiety blunted the appetite of our eyes. Desist, therefore, from thrusting out reasoning from your mind because of its disconcerting novelty' (Lucretius 1994: 63; 2:1031–1040). We give book number and lines of the quotation in keeping with other work on Lucretius, in addition to the usual citation protocol.

everyday, and that what might seem part of the normal flow of things has the opportunity to be affective.

For Lucretius as for Serres that there is something rather than nothing is not only worthy of record, but needs critical positioning. Critical, that is, in ways that both Serres (2014: x–xiii) and Flusser (2002a) explain comes from the Greek *krino*/*krinein*: to judge, decide. A critical action 'splits oneness, breaks it down, breaks in half: it casts doubt on oneness' (Flusser 2002a: 42). A doubt that Lucretius has no need of, so atomistic is his world already. The point of critical judgement is a moment of decision (de-cision, to cut in two), where paths fork (Serres 1995: 57; Serres 2014: xi) and the future superposition of possibilities urge us to critical creativity.[5] 'Normally,' Flusser says of crisis, 'this concept describes the point on a curve where it changes identity' (Flusser 2002a: 46). Criticality as crisis, as judgement and breaking open, decision and multiplicity brings us back to Lucretius, via Serres, and his proto-complexity. For complexity biologist and philosopher Stuart Kauffman also makes use of the term 'critical' to denote the complex region where chaos (supracritical) and order (subcritical) become each other, in which life is created and evolves (Kauffman 1993, 2008; see also: Brassett 2015). Such criticality as a spur to, and condition of, creativity is important for us, and we would like some more time on the complex aspects announced here.

'The origin of things and the beginning of order,' Serres tells us, 'consist simply in the narrow space between *turba* and *turbo*' (Serres 2000: 28). *Turba* is the chaos of the

5 A dense nest of concepts is implied here. In *Genesis* (1995: 57) Serres relates the forking, bifurcating and dovetailing of paths and swallowtails as also an *instauration*. This word is heavy with resonance as it is used through æsthetician Étienne Souriau's work, where it relates 'inception' and 'establishment' (Souriau 2009: 108). Serres gives an etymology for instauration from the Greek fork as in bifurcation (Serres 1995: 57), but it is unclear where he gets this. The etymology of the French word *instauration* is the Latin *instauratio*: renewal especially after destruction, also restoration, that Serres acknowledges through referencing the Rennaisance Latin *instauratrix*, which has these meanings (Hoven 1993). The Proto-Indo-European root *sta* appears in many European words of control and stability; for example, English 'stand' and its Polish equivalent '*stać*', as well as the Greek '*stasis*'. *Stasis*, however, is interesting as it also relates to crisis in terms of 'civil strife' (Agamben 2015).

tumultuous crowd, and *turbo*, the spinning of the vortex, local order self-organising from never-ending chaos. We have the complexity of the vortex, and the disorder of the storm, and the silent background equilibrium of the multiplicity of atoms falling, with the nature of things created always in-between. Creativity for Serres it is to be found in the in-between, the middle of all these, the *turba*, *turbo* and the fall, in the narrow spaces broken open by the swerve. But there is more: to be open to the swerve and the collisions it produces is as important for a rethinking of creative strategy as it is for creative ontology and ethics.

2.2. Beyond Strategy

As one of his consequences of reading Lucretius's *De Rerum Natura*, Serres provides us with not only collisions and creativity, repetition and the return, but also Mars and war, Venus and love. 'From Heraclytus to Hiroshima,' he writes, 'it [Western Science] has never known anything but martial nature' (Serres 2000: 108). Collisions are always lovely: markers of the processes of loving and its creative outcomes. Strategy is always martial—*strategos* in Greek was the head of the army—even if its primal warlike nature has been forgotten with its use in business contexts since the 1960s and others ever since. Lucretius opens onto Venus, placing at the forefront of the nature of things a poetic, philosophic and natural scientific call to creation, and closes abruptly with death, plague and pestilence. If his works, turbulent and swerving themselves, are ignored then the incessant fall of all things to death is all that is left. The promise of entropy must be creative declination. There is either swerve or death. Strategies demanding a clear road to goal—even the best, complex, topographic strategies—are martial acts nevertheless. So, keep the complex topography but remove the war and make the original mover Venus. What then? In one way we are offering here an approach to designing that not only regards colliding as its model but is also, itself, a collision: a collision

between philosophy and design. But this is not just about philosophy and designing. As it is also about creativity and *everything* the stakes are about as high as they can get. Serres and Lucretius recognise this: love and war, life and death, nature or otherwise. Collisions spun into fabulous turbulence by the swerve describe creative practice and the ethics of creative practice, as well as the creative possibilities of ethics. To be a 'fan of collisions' (Vonnegut 1992: 220) is to do Venus's equivalent of Mars's strategy, and its ripples will be felt politically and scientifically to the ends of the universe. To overcome Mars is to recognise the material atomisation of all things, their swerve of course, and their coming together in creation; that is to recognise the collective constitution of all things as federations of nature. Serres explains that the 'natural constitution, in the last instance, is none other than the atomic constitution. Men, no less than things, are composed of atoms. Their soul and their conscience. Their collective is thus a composition of compositions' (Serres 2000: 121). Deleuze brings us to a similar position. 'With Epicurus and Lucretius,' he writes

> the real noble acts of philosophical pluralism begin. We shall find no contradiction between the hymn to Venus-Nature and to the pluralism which was essential to this philosophy of Nature. Nature, to be precise, is power. In the name of this power things exist *one by one*, without any possibility of their being gathered together *all at once*. (Deleuze 2004: 304. Original emphases)

Serres and Deleuze, philosophers of multiplicity both, find in these ancient atomists kindred souls: breaking open and asunder things that called themselves One or Whole. Nature, Deleuze writes, neither collects nor attributes nor totalises, but distributes, conjoins and disjoins. Nature *is* nothing but power, a relation of forces that themselves function according to the speeds and slownesses of their parts (Deleuze 1988a and 2004). The Whole, Deleuze will tell us in *Anti-Oedipus* written with Guattari and published a few years after *The Logic of*

Sense, is itself a product (Deleuze and Guattari 1984: 42–44), a product of the machinic creation of multiplicities. The Whole is neither a lost original totality to be regained nor an ideal future one to be realised, but a product of every multiple, and which enters into the multiple from which a new whole might emerge. While Deleuze and Guattari here couch this discussion in terms of 'desiring-production'—'desiring-production is pure multiplicity,' they say, 'an affirmation that is irreducible to any sort of unity' (Deleuze and Guattari 1984: 42)—this is close to Deleuze's position on Lucretius: 'the multiple as multiple is the object of affirmation, just as the diverse as diverse is the object of joy' (Deleuze 2004: 315). Joyful affirmation of a multiplicity that occasionally comes together as things, which dissolves and recombines as principles and expressions of the *turbo* from the *turba*. 'We ourselves, born from the vortices, like naked Aphrodite in the foaming seas, are troublemakers full of troubles' (Serres 2000: 90). It is with us as 'troublemakers' that we will take this chapter to its next set of encounters: those that will bring us closer to particular creative practices, including—of course—design.

3. Colliding and Designing

Vilém Flusser, in his short essay 'About the Word *Design*' (1999), delves into design's etymology and unearths some gems; notably, that to design is also to trick, and designers are tricksters. 'The word [design],' Flusser writes, 'occurs in contexts associated with cunning and deceit. A designer is a cunning plotter laying his traps' (1999: 17). Troublemakers born from the turbulent seas, full of troubles, are also critically creative, we have seen. To this we add the designer as trickster. With the trick and the trap positioned as possible outcomes to troubling, even terrifying, complexity. And as we found that we should not try to dampen the terror of the new, the trickster may not need taming.

Philosopher Anne Sauvagnargues notes in *Deleuze et l'art* (2006: 146) that the 'creative posture reveals the blockage at the same time as its line of flight'. A trickster's 'creative posture' is one that sees the critical state of situations (its 'blockages'), as well as opportunities for novel outcomes ('lines of flight'). We noticed further above how Kauffman finds critical creativity happening at the moments and in the milieus where order and chaos become one another (Kauffman 1993, 2008). For us, the designer as trickster is both a collider and collided, always operating with faces turned to catastrophe and stagnation; critical in every sense of the term. Existing as troubled and troubling, terrified and terrifying, facilitating not only new production, but also the perpetuation of their own conditions for creativity. US architect agency Studio Gang highlight just such a posture.

<INSERT FIGURE 1.1 ABOUT HERE >

3.1. Polis Station: deviating and distributing

The 'Polis Station' (see fig. 1.1) design concept was Studio Gang's entry to the 2015 Chicago Architecture Biennial (Chicago Architecture Biennial 2015, Studio Gang 2015). It is a project that emerged from a collision of two different, troubling, swerved and condensed processes: 'polis' as a coherent coagulation of parts, and 'station' as a moment for the production of such a coherence. Finding itself in a moment of crisis, Studio Gang has generated a particular, critical model for delivering different political, social and cultural entities. The conventional police station is designed to funnel citizens from the chaotic to the laminar through a process of arrest, judgement, criminalisation, incarceration and, maybe, rehabilitation. Such a police station is a closed building struggling in an open system, a laboratory for the production of tame results shielding itself from chaos as Serres says,

organising a flow of people from a chaotic outside space towards the ultimate closed system: prison. Yet sometimes this has disastrous effects. The US police station—Studio Gang's reference point—while striving to produce material, social and psychological equilibrium from the chaos of criminality nevertheless seems to contribute its own amount of strife.[6] It may not be surprising that in this climate Studio Gang approach the police station as an object for creative reconsideration, as the current brand of *stasis* produced by police stations appears closer to the word's meaning as 'civil strife' than equilibrium (Agamben 2015). Studio Gang's 'Polis Station' works in a different way.

Their company website describes the project thus: 'Polis Station proposes that police stations be reoriented toward their communities and become sites of social connection where officers and neighborhood residents can find many opportunities to interact' (Studio Gang 2015); thus enabling collision not only in the sense of permitting contingent encounters, but also in the sense that individuals are able to design relationships, to design what their communities might become. The research behind the vision of the project included a typology of police buildings ranging from: the Watch Box of the 1700s, with its technologies of the stove and extra lamp oil; to the Call Box, a box accommodating the new technology of the telephone; the fortress station of the 1960s and 70s, as police stations expanded to accommodate both growing bureaucracy and gang-related disorder[7] (see fig. 1.2). 'Polis Station' is constructed as a series of encounters each posing the question of what it is to police, with the outcomes a series of decentred interfaces: the police station as community centre; police housing co-

6 Recent US crime statistics published by the FBI show 1,165,383 violent crimes reported in 2014 from murder to rape and aggravated assault (FBI 2015). Further, 1086 people killed by police in the US in 2015 (up to 16 December)—of which 27% had mental health issues, and according to *The Guardian* newspaper's project 'The Counted', 'Black Americans killed by police are twice as likely to be unarmed as white people' (Lartey et al 2015).

7 This period is expressed viscerally in John Carpenter's (1976) film *Assault on Precinct 13*, where a small group of stranded police officers, citizens and criminals in-transit are besieged in a local Los Angeles police station by a heavily armed mass of co-operating gang-members.

located with other public sector workers, such as teachers and health workers; workshops for shared maker spaces, with a trade school in an old industrial space to help those released from prison learn a trade; a police academy where local people can join up; a meditation garden; a counselling centre; and an urban nursery to help 'returning citizens' learn landscaping. The police station as static entity transforms into a dynamic and distributed 'Polis Station' through a series of collisions of people, practices, services, urban infrastructure and visibilities.

<INSERT FIGURE 1.2 ABOUT HERE >

Dissolving the traditional experience of the police station as a site of disciplining and control, Studio Gang disorganise the fortress into a multiplicity of points of contact between citizens and police officers. In this way Studio Gang hopes to liquefy the blockages between police and community—and the troubles such divisions appear to intensify—and to reconfigure police stations as polis stations: emergent elements of polis-citizen-officer modalities in relation to each other under different conditions, and distributed across the neighbourhood in a more molecular fashion. In fact, Studio Gang's founder, Jeanne Gang, reveals the Epicureanism of this project on the business/design website Fast Company, describing 'the two prongs' of the 'Polis Station' project as: '"police station becomes community center" and police officers are "atomized" and become part of the community' (Budds 2015). We wonder whether the dissolution of the antagonistic, fortress-like structure into something more immanent will allow for better relationships between forces of order and those to be ordered. Nevertheless, we do see The Swerve at work.

While 'Polis Station' is admirably immanent to both the material and the structure of the milieu in which it operates, its reliance upon the concept of the 'station'—as a machine for producing equilibrium—might need readdressing. Through the heterogeneous elements of its codes, laws, uniforms, practices, regulations, rituals and stations,[8] the design of the US criminal justice system produces captive bodies and constrained bodies, as well as subjectivities. We have already noticed how police stations contribute to the design of a strategically effective, though dysfunctional, social and political equilibrium—a disorderly ordered disorder. But it might be worth considering further the ways in which the concept of deviation, *clinamen*, might critically unseal this unproductive lockdown of order and disorder.

Following Foucault we might call the contemporary police station system a 'heterotopia of deviation' (Foucault 2008: 18): a system characterised by its contested spaces, its sites of difference, and exemplified for him by care homes, psychiatric hospitals and, of course, prisons. For us, and especially in relation to the example of 'Polis Station' that we have given already, the deviation announced here is already swerving from a heterotopia of crisis. Crisis heterotopias in, what Foucault calls, primitive societies were sacred or forbidden places, places for people in transition (we would also argue 'transformation') such as adolescents or menstruating women. For young men up to the 20th century the boarding school or military service was the critical space where virility was allowed to manifest; for young women up to the middle of the 20th century, the 'honeymoon trip' where a young woman would be 'deflowered' in the honeymoon hotel—a place without a specific set of geographical

8 We would like to draw attention to the relevance of Foucault's concept of the *dispositif* here as a way of thinking this heterogeneity of forms operating in accord to regulate the relationship of forces in the production of power. While a fuller encounter with this concept warrants much more than a footnote, we would like to highlight it as a point of collision with our chapter, and note that a future line of examination of *dispositif* and *clinamen* in terms of design and creativity would be fruitful. See Agamben (2009) for an exploration of *dispositif* that encounters more of the political and economic issues that emerge in this chapter.

markers. As with many concepts from Foucault, these (heterotopias of crisis and deviation) should not be seen in their purity alone, marking separate stages of progressive development. As should be the case with a concept such as 'heterotopia', crisis and deviation can exist as modes of any ontological space. This we have already noticed above, specifically with reference to Flusser and Lucretius. For Foucault here, deviation itself deviates from the moments of crisis, those events (spaces and times) of judgement production and power as domination, to enter a new trajectory generating the spaces of power as action (Dovey 2013); all the while carrying elements, atoms, of the other modes along for the ride. But as we have also seen, a crisis can be a moment of critical creativity at which all the possibilities of design can be superimposed. The heterotopic model can, immanently, exhibit the heteretopia that it allows for, with deviation and crisis providing key impetus for each other as well as opportunities where they can recoil and flee. 'Polis Station' already collides police and *polis*, deviates the relationship between community and law through buildings and spaces designed as a series of possibly troubling and troublesome encounters, ricochets between spaces enabling education, rehabilitation, mental health and policing, producing a heterotopia that has not only deviated but critically so.

3.2. Designing Heterotopias

In his examination of the concept of heterotopia, theorist Robert Topinka (2010) argues that scholars have focused on heterotopia solely as a site of resistance and not enough on the idea that such sites are where 'epistemes collide and overlap, creating an intensification of knowledge' (Topinka 2010: 55). Following this we would also say that through the relations enabled by this unusual space, knowledge becomes contested and multiple, ontologies become critical and creative, and from these new opportunities emerge. We would say, then,

that Studio Gang offers such a critical moment of swerve and collision, and in doing so offer not only a foucauldian homeorrhesis[9] of epistemology and ontology and heterotopia, but also (to rework a quotation from Deleuze given above) a noble act of socio-political mulitplicity. Where 'Polis Station' works not to produce a culture of stasis (in all its problematic definitions), but one of open emergence, Topinka (2010: 56) tells that the term heterotopia originates in the field of medicine and refers to the displacement of an organ of the body into another place, a place it should not be. In the preface to *Order of Things* (1994) Foucault uses heterotopia in reference to an essay by Borges, in which Borges notes the classification of animals in a fictional Chinese encyclopaedia—'Celestial Empire of Benevolent Knowledge'—a whole whose multiplicity is affirmed through laughter. As Foucault quotes, the animals are classified like this:

> (a) belonging to the Emperor, (b) embalmed, (c) tame, (d) sucking pigs, (e) sirens, (f) fabulous, (g) stray dogs, (h) included in the present classification, (i) frenzied, (j) innumerable, (k) drawn with a very fine camelhair brush, (l) et cetera, (m) having just broken the water pitcher, (n) that from a long way off look like flies. (Foucault 1994: xvi)

Reminding us of Deleuze's (1988b) discussion of Spinoza's body and its definition along the lines of speeds and slownesses, and affective capacities, Foucault provides storytelling as a critically designed taxonomy, a taxonomy that is swerved out of the norm, away—as Deleuze says following Spinoza—from issues of form, function and substance. Order and regulation

9 We have used 'homeorrhesis' (the production of stability through movement) as it is important in Serres's work on Lucretius (2000). There is another philosopher, however, whose work is not only commensurate with the concepts we are putting together in this chapter, but to related issues of thermodynamics and creativity and homeorrhesis: Gilbert Simondon. See especially: Simondon (1989, 2009 and 2012) where he mobilises the thermodynamic concepts of 'homeostasis' and 'metastability'; and Combes (1999), Chabot (2003), Sauvagnargues (2012) and Brassett (2016). We will leave a fuller exploration of Simondon in relation to these concepts to another day.

in this taxonomy are subjected to a minimal deviation, and their new trajectories are swerved from their rational premise thereby creating an opening, a variation. Foucault's reading of Borges's redesign of narrative, so deviant yet appearing to perform its taxonomic function, is sent into a laughter that shatters 'all the familiar landmarks of my thought' (Foucault 1994: xvi). The redesign of the police station as 'Polis Station', shattering the familiar landmarks of power and control, and situating them across the manifold urban landscapes while not borne of laughter, may nevertheless construct new trajectories for socio-political narratives to be created.

Borges's classifications, 'Polis Station', Lucretius and so on, contain a number of equally weighted actions, characters and moments whose equality, equanimity, equilibrium are shaken out of their slumbers. This 'equal weightiness' is a decidedly Epicurean concept, and one that necessitates the swerve without which there would be nothing. And so Lucretius, with the *clinamen*, describes the ways in which something comes of the general fall of equally weighted things and becomes particular, new, locally combined into complexities in creative ways. Serres explains of the same concept:

> Equilibrium is global and distributed by chance in space and time. In uncertain places, and in unforeseeable times, another beginning takes place, somewhere else. There is no closed cycle on a local level. There are worlds which are scrap-heaps, there are worlds being born. Locally it is aleatory. Globally it is balanced. (Serres 2000: 173)

And Lucretius, who writes:

> [. . .] since this world is the product of Nature, the happenstance
> Of the seeds of things colliding into each other by pure chance

> In every possible way, no aim in view, as random, blind,
>
> Till sooner or later certain atoms suddenly combined
>
> So that they lay the warp to weave the cloth of mighty things:
>
> Of earth, of sea, of sky, of all the species of living beings. (Lucretius 2007: 68–69; 2:1057–1064)[10]

Deleuze (2004) makes similar points, highlighting the non-totalising, distributive and conjunctive character of nature and the relations between sums and parts. He notes well too that the swerve is not the movement that knocks the atoms off course, but the always present, original determination of direction and movement of atoms (Deleuze 2004: 306). The *clinamen* is not a secondary movement, he emphasises. This is an important consideration to make when thinking of The Swerve: things do not fall and then are hit by The Swerve; their swerving is part of their ontological milieu. We might do well, then, to highlight this in relation to design too: The Swerve does not hit already designed stuff; it is an important affective condition of the ontological milieu of designing. Design, all creativity, everything, is swerve and has been swerved; without the *clinamen* there would be nothing.

3.3. The Swerve and the Design Process

For all the differences relating to local contexts and particularities of upbringing and education, most designing operates as a linear and goal-oriented process. Designing usually starts with a brief from a client, progresses into a research phase, thence with conclusions from research helping to generate a range of relevant design concepts, which are discussed with the client to help formulate a particular design to develop and resolve, until a final

10 The prose translation is as follows: 'This follows from the fact that our world has been made by nature through the spontaneous and casual collision and the multifarious, accidental, random and purposeless combinations could serve as the starting-point of substantial fabrics—earth and sea and sky and the races of living creatures.' (Lucretius 1994: 64; 2:1057–1064)

outcome is reached. Notwithstanding that there are many iterative instances where data is folded-back into earlier stages of the process (the concepts generated can be taken back to users or markets to test before being developed as designs; more research can be demanded by various trajectories taken in resolving designs, and so on), this process is a teleological one. But there is no necessity here: linear, teleological and identity-driven design is not the only option. There are ways in which the *clinamen* that has constructed design and the collisions that design can produce can be emphasised in any process. We shall now give four examples expressing a Lucretian swerve of the design process.

Example 1. Inspiration found in the random

One can extract oneself from the everyday, commercially driven teleology of production and wander; become a *flâneur* (Baudelaire 1964, Benjamin 2002), adrift in the complex flows of the world and open to the contingent delivery of unexpected outcomes (O'Reilly and Linkson 2009: 76–79). Again we meet the heterotopic and the clinamen, with organs of creation swerved from their proper places into chance collisions; with the once normal, normalised practices and products disturbed from their orbits and open to the possibilities that being dissolved and distributed brings. O'Reilly and Linkson (2009) note the way that graphic designer Nick Clark wanders, *flâneur*-like, collecting ephemera (tins of beans, old toys and sticker albums) as if they were drawn into his strange orbit, to accrete with him as he drifts through his universe. Clark's creative system obviously benefits from such additions, and his inspiration—O'Reilly and Linkson (2009: 76) note—'is to be found in the random'; as Lucretius writes (and we quote above) Clark and his stuff becomes 'combined/So that they lay the warp to weave the cloth of mighty things' (Lucretius 2007: 69; 2:1062–1063). Serres places Lucretius's text in relation to more recent sciences of nonlinear dynamics, chaos and

complexity, especially with his (Lucretius's) discussions of meteorology. For Serres *turba* and *turbo*—disorder, confusion and tumult, and vortices and spinning tops respectively (2000: 27–31) as we note above—help him position Lucretius at the birth of a physics of which we are still part, as opposed to an aberrant, early mistake. The aleatory and stochastic, chance and randomness, of the social norms, cultural forms and everyday actualities of life that design engages in all their complexity, therefore announces that design is always already entangled with a world that is complex, distributed in entropic and creative clusters, in critical moments between chaos and order. That is, design is already Lucretian.

Example 2. The welcome openness of research

Another way designers develop negentropic processes is by placing importance on the Research Phase—for investigating cultural contexts, socio-political and historical issues, user/consumer behaviours—such that the focal point of creative agency can be extracted from of the closed-system of the designer/design team. In his preface to Brenda Laurel's influential *Design Research* (2003), new media theorist Peter Lunenfeld writes:

> In the 21st Century, the linear narratives of research progress are dissolving into decentered threadings, less branches off a main root than tide pools by the shore, or the rhizomatic growth of peanuts in the soil (Lunenfeld 2000). As information and data about everything explode in a frenzy of rhizomatic connectivity the very search for what to research becomes its own research issue. The research model becomes a design problem that can also serve as its own solution. (Lunenfeld 2003: 14)

Referring to his own book *Snap to Grid* (2000)—rather than Deleuze and Guattari (1988)[11] whose concept of the rhizome has been so influential in creative thinking (see Wilson 2003, Coyne 2005 and 2008, Teal 2010, van der Beek 2015 for just a few examples)—Lunenfeld recognises the distributed, nonlinear and complex act of research as it is involved in designing. Lunenfeld calls this preface 'The Design Cluster', deliberately referencing Marshall McLuhan's *The Gutenberg Galaxy* (1962), in order to emphasise the varieties of clumping of (designed) matter, work and cultures in a vast expanse. The image here is decidedly atomist with nature the result of the tiniest elements of matter swerved off course to collide and coagulate. Design, in Lunenfeld's cosmological image, seems to be both equated with the *clinamen* and that which results. Referring back to Laurel's book, he praises its 'welcome openness' in its 'understanding that no single research methodology could possibly account for the diversity of inputs and outputs to contemporary design practice and process' (Lunenfeld 2000: 10). For Lunenfeld here, as well as for Laurel, design research allows a space (albeit vast) for the complexities with which designing has to deal to be experienced and accessed. The intersection of designing with complexity theory is strongly evident here, and something that has been attracting attention (recent examples include: Findeli 2001, Kearnes 2006, Alexiou and Zamenopoulos 2008, Johnson 2008, Zamenopoulos 2012, Zamenopoulos and Alexiou 2012, Brassett 2013 and 2015).

Example 3. Diagramming forces

Engineering and liberal arts academic Kenneth Knoespel argues (2001) that a diagram for Deleuze is a drawing to think with but never simply a visual representation (though visual

11 In *The Digital Dialectic* (1999: 236 n. 1), a collection he edits, Lunenfeld notes the influence of Deleuze and Guattari on theoretical engagements with digital culture in general, as well as in this particular collection. Lunenfeld also acknowledges the paradox here, given the title of the book and Deleuze's detestation of dialectic (Deleuze 1995: 6).

representations are never simple), it is always connected to usage/function/context (as we will see Guattari's elaboration of the diagram as machine). A diagram may take a specific visual form with the semiotic social and political functions: ephemeral (the doodle), professional or scientific. In Foucauldian terms it is technical practice (for example by hand, or in geometrical form, or by advanced imaging techniques) producing, configuring and distributing knowledge. For Deleuze the diagram relates to the complexity of forces arranged in different assemblages (see: Deleuze 1988a, Deleuze and Guattari 1988; also: De Landa 2000, Teyssot 2012, Vellodi 2014), and as such this concept has direct bearing on what we have been discussing regarding design. In his book on Foucault (1988a) Deleuze gives one of his best characterisations of the diagram, according to four 'definitions':

> [the diagram] is the presentation of relations between forces unique to a particular formation; it is the distribution of the power to affect and the power to be affected; it is the mixing of non-formalized pure functions and unformed pure matter [. . . and] it is a transmission or distribution of particular features. (Deleuze 1988a: 61–62)

Differently to stratified and segmented knowledge, power is diagrammatic: it mixes, folds, distributes and relates.[12] Diagram production is also one of Deleuze and Guattari's four markers of pragmatism (along with tracing, mapping and programming), they explain in *A Thousand Plateaus* (1988: 139, 145–146). Diagrams, design theorist Betti Marenko explains in a paper on design and divination, 'articulate the conditions that make possible conceptual creation and the manifestation of new expressions – but do not determine directly the

12 Deleuze also marks the diagram as strategic rather than stratified (Deleuze 1988a: 62). Deleuze's use of 'strategic' has none of the negative connotations that it has for Serres, and aligns with the ability/need to 'think otherwise' (Deleuze 1988a: 98): thought set free to head to the future along a strategic line that is developed as becoming. We will leave to another piece of work a more critical look at design strategy in relation to Deleuze and Serres.

outcome' (2015: 118). The diagram is, thus, a reworking of the semiotic process into a machinic one, metamorphosing any idealisation of significations of meaning into actual, material, creative, future-focussed work. It is for this that Guattari first uses the term 'diagrammitisation' (in a lecture course in 1975, published later in *La Révolution moléculaire* in 1977, with English translation in 1984)—identifying it as a quote from pragmatic philosopher Charles Sanders Peirce. He writes:

> this work of diagrammitization, has become the necessary condition for the de-territorializing mutations that affect the fluxes of reality; no longer is there representation, but simulation, pre-production, or what one might call 'transduction'. The stratum of signification disappears; no longer are there two levels and a system of double-articulation; there is only a constant return to the continuum of machinic intensities based upon a pluralism of articulations. (Guattari 1984a: 95)

For Guattari the diagram materialises flows of reality as well as 'deterritorialises' them from any formal systematisation to which they may have been subjected. Meaning is neither imposed nor unearthed in and with the diagram, but connections made leading to what Marenko describes as the manifestation of possible future expressions (see also: Brassett 2016, Brassett and O'Reilly 2015). Indeed, as Knoespel argues, the Greek etymology of the verb of *diagramma* means something figured, mapped, planned – marked out by lines – but also, 'carries the secondary connotation of marking or crossing out' (2001: 147). So intrinsic is this mutability to the practice and experience of the diagram is that its very cognition is swerved/swerving, carrying with it the sense that it may be redrawn, changed, re-arranged. It is why Knoespel diagrams the diagram (the diagram as example) as a 'relay'. He writes:

> While a diagram may have been used to visually enforce an idea one moment, the next it may provide a means of seeing something never seen before. Because diagrams mark a gesture or momentum toward recognition, they function as vehicles that invite elaboration through narrative. (2001: 147)

In other words, diagrams trace the genesis and direction of travel of their own forming as social, cultural and political forces. Take for example the diagrammatic narrative of John Cook (see figs. 2.1).

<INSERT NEAR HERE FIG. 2.1>

Research around the Camdeboo National Park in South Africa where a number of oil companies had been given drilling licences to explore fracking, led University of Westminster (London, UK) architecture, digital art and landscape design student John Cook (2015) to design an alternative scenario where entropic processes become regenerative. Combining tourism and solar farming, the initial construction of 'Camdeboo Solar Estate', seeks to design through collision a Stonehenge of the future from a working sustainable solar farm. The spatial arrangement of this technology is narrative designed around the movement of the earth around the sun, the changing equinoxes and the mythological relationships that have been generated over time.

In an article for *Architectural Digest* peppered with references to Deleuze and Guattari and Foucault, and many of the concepts we have been expressing in this chapter, architect François Roche writes that 'science fictional architecture is a space of confrontation [. . .] By necessity, it confronts its emergence, its Gestalt, and can only be negotiated in the visible spectrum: that is its political and operational condition' (Roche 2010: 66–68). Like Lucretius, Cook's design collides science and fiction, inventing mythologies to collide on different

plateaus across millennia. Over time, Cook's original solar farm transforms into vineyards, which then degrade and disintegrate with the environment (see fig. 2.2), so that by the year 3000 there is revealed a series of landscape-scaled astronomical instruments that enable the park-solar farm-vineyard to be used as an astronomical observatory (see fig. 2.3).

<INSERT NEAR HERE FIG. 2.2>

<INSERT NEAR HERE FIG. 2.3>

Cook opens the conventional architect's master plan to change, where the entropy of decay delivers moments of negentropic creation and wonder. But it is also the production of a diagram; an act of diagramming that is always already Lucretian in its swerves and collisions. Which is at least one of the directions that Cook, Deleuze, Studio Gang et al deliberately open up for us. There are, of course, many others who follow different lines from these and other diagrams that cross philosophical, design and literary constructs.

Example 4. Externality

The final example that we wish to address of the design's *clinamen* coming out in the open is more organisational: the use by in-house design teams of outside consultancies and pushing 'normal' practices outside of the regulations of company equilibrium by accessing energy from the outside. Deleuze emphasises throughout his work (alone and with Guattari) the power of exteriority. At the end of *Foucault* for example, he tells that 'forces always come from outside' (Deleuze 1988a: 100): when the outside folds over becoming inside. A few pages earlier Deleuze provides a source-free open-ended sentence set-off in quotation marks, as follows: '"I have never written anything but fictions . . ."' (Deleuze 1988a: 98). We

imagine that these words are from Foucault, but they could just as well be from Deleuze, or any of the characters he mentions in the two preceding paragraphs—Blanchot, Nietzsche, Heidegger, Gogol, Checkov and Bely. These outsides of Foucault fold effortlessly into Deleuze's presentation of Foucault's work, as well as his own. He continues, not quoting now: 'But never has fiction produced such truth and reality' (Deleuze 1988a: 98). The folding of philosophy's exteriority—fiction in this particular case—back into philosophy is a sure way of producing 'truth and reality', albeit in a fictional sense: Lucretius is a fine example of this, fulling[13] the different fibres of philosophy, poetry and physics into a many folded and entwined felt.[14] Design's outside folds inside in many different ways too, as we have been seeing, and may be its only way of avoiding the impositions of heroic (Julier 2013) or paternalistic (Thorpe and Gamman 2011) practices and ways of thinking.[15] In the same vein, and for quite some time, design companies have been introducing into their teams people with both multidisciplinary or specifically non-design skills: psychologists, anthropologists and sociologists, literature specialists and even philosophers (The Design Council 2005, Kimbell 2011 and 2012). Like the Möbius strip so often associated with Deleuze and Guattari's work there may be times when the exterior is, can or needs to be, located inside.

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13 To 'full' is to mash up fibres—of wool, for example—into felt. Deleuze and Guattari (1988: 474–500) remark on the difference between systems of weaving (striated) and making felt or patchwork in their section of the book, '1440: The Smooth and the Striated'. 'Felt is a supple product,' they write, 'that proceeds altogether differently [to weaving], as an anti-fabric. It implies no separation of threads, no intertwining, only an entanglement of fibers obtained by fulling (for example, rolling the block of fibers back and forth' (Deleuze and Guattari 1988: 475). See also: Brassett (2005) for a discussion of this in terms relating to the current chapter.

14 It is worth mentioning here the practice of Design Fictions (Sterling 2009, Hales 2013). Often linked to Critical Design (Dunne 1999, Malpass 2015) and Speculative Design (Dunne and Raby 2013), Design Fictions operates too as critical response to culture, as well as providing speculative and designerly expressions of the future-oriented modal question 'what if?' (Booth et al 2009, Hales 2013, Brassett and O'Reilly 2015). Hales (2013) notes that in their speculative capacity Design Fictions 'take their cue from science fiction', and further that 'the notion of design fictions opens design to theoretical and artistic methodologies that can be used to excavate past, present and future media through its fictions' (Hales 2013: 2, 4). This is different to our presentation of the colliding of fiction/literature, philosophy and design, but not radically so.

15 Such 'top-down' practices are not universally frowned upon of course. Management scholar Roberto Verganti (2009) sees a top-down, meaning-centred approach necessary for any radical innovation. See also Norman and Verganti (2014).

3.4. Designing and Colliding

The benefit of collisions that force the design process out of equilibrium is therefore not such big news. Nevertheless, as we have seen, what constitutes the design process can itself be forced into colliding with *outsiders* to that process. It has been a tenet of user-centred design that the locus of authority for designing things for people should be the people who will be the end-users. This is further complexified by the manifold practices, researches and related design activities that go by the name: 'co-creation' (see, for example, Sanders and Stappers 2008). Such processes are still teleological, however, with the inputs from users helping only to iterate a design towards a more ideal (or relevant, or appropriate) final outcome (Brassett and Booth 2007a, 2007b). We wonder whether these are ever more than gestures serving to salve some designers' bad consciences at participating in 'phoney' practices (Papanek 1984)? A different model of an open, complex and collision-inducing design process, then, might be to dispense with the notion of a final outcome altogether. Where impacts from each moment of collision with users, with other designers, with clients, with any actors across the landscape in which design is practised, are valued and promoted, leaving only an evolving, dynamic and symbiotic process with no end but with myriad, non-privileged outcomes that can emerge at any moment.

4. Last Words

In the epigram to this chapter Vonnegut suggests that far from being privileged (spiritual) beings, we are just machines. Machines that in the normal run of things have not much else to do—that is, no real purpose or aim or meaning—other than to collide and collide and collide (Vonnegut 1992: 219–220). And so creativity emerges, just as Lucretius shows. We offer the same for design: it too needs to be a 'fan of collisions'.

But is it enough, really, to be a 'fan of collisions'? This phrase serves well to emphasise a direction to take and the rationale for taking it. The journey we have been on however takes it further still. It is not enough simply to say that designing should develop a collision-loving attitude, true though this may be. Neither should we imply that it is adequate simply to uncover the collisions that lurk behind or beneath every creative act, while this may be necessary also. Designing and colliding are co-extensive, they are immanent. They are proof that the swerve has knocked atoms off their inexorable course to the stagnant death of equilibrium. Designing emerges from the collisions—and the ensuing coagulations and ricochets—that the *clinamen* delivers, it is proof of a negentropic eruption that develops 'crystals sunk in ash' (Serres 1982). Designing also produces collisions: it is a collision-inducing machine.

The trouble is that design—as a set of practices and processes, and too often identified as objects—often forgets or actively negates the swerves, collisions and the rest with which it is implicated.[16] While we hope that this chapter provides one way of rekindling design's Lucretian nature, we are loath to position the ways in which it has been forgotten etc.—rationalisation, meaning, modelling and thinking—in opposition to collisions and The Swerve. It is obvious that for some such activities are themselves full of creative opportunity and can lead to much. What we would like to emphasise is that these moments (rationalisation, and so on) have a tendency to dictate and overcode; that is, to offer

[16] We note that there are many ways in which design's Lucretian nature has been either ignored, forgotten or actively negated, as follows: it has striven to be serious, proper and mature (Whicher et al. 2015); or sought to emphasise its axiomatisation in rationalisation (Simon 1969), meaning (Krippendorf 2006, Verganti 2009), or thinking alone (for example: Brown 2009, Martin 2009, Neumeier 2009). There have been many efforts to counteract such axiomatising of design along the lines noted: by thwarting its rationalisation through bringing wicked problems closer to designing (for example, Hatchuel 2001, Coyne 2005); its domination by meaning-production by highlighting the role of affect in design (for example: Marenko 2010, Brassett and O'Reilly 2015); its linear modelling by opening designing, again, onto the chaotic and complex (for example: Brassett 2015); and its overcoding as a form of thinking only by showing where design's value can be developed along different lines (for example: McCullogh 2010, Kimbell 2011 and 2012, Tonkinwise 2011).

interesting lines of investigation and practice only to fold them back onto well-worn structures of power that strive for domination and control.

The ways in which a practice and process of designing might proceed such that their swerves and the collisions that ensue are championed, we announce earlier in this chapter, especially through the examples we have given where colliding/designing occur: random; openness; diagramming; and externalising. We are wary of introducing these as axioms of good design however. That is, as we have noted above, 'The Swerve does not hit already designed stuff; it is an important affective condition of the ontological milieu of designing'. With characteristics such as random, openness, diagrams and externality, then, it is not so much an issue of forcing these onto practice but uncovering where these are already taking place, where they were blocked, or where they might possibly erupt in the middle of our creative practices. We might ask designers, philosophers, any creative practitioners, then: 'where have you swerved?' Because it has happened. 'Map your collisions!' Because you may have forgotten how well they served you. 'How have you diagrammed your practice?' Because this will show how you relate, fold, distribute and mix as active verbs, rather than identifiable traits. 'Where do the most internal parts of your practice open up to the most external?' Because you know that those internal parts, the most protected and defended are also the most ossified. 'When, how and why have you blocked any engagement with randomness?' Because those ruts you have worn are the ways that you anæsthetise yourself against the randomness of creative collisions through habit. 'How might you make yourselves fans of collisions?' Because then you are The Swerve of all things.

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Figures

Fig. 1.1 Studio Gang (2015) Polis Station The diagram of Studio Gang's entry to the 2015 Chicago Architecture Biennial, rethinking the place, people and Police Station.

Figure 1.2 Studio Gang's visual history of policing as the dynamic relationship between space, buildings and technologies.

Figure 2.1 Camdeboo Solar Estate John Cook (2015) Camdeboo Solar Estate. Landscape, architecture and speculative design project by John Cook, for Camdeboo National Park, South Africa. "Opening in 2050, The Camdeboo Solar Estate looks to address both the agricultural and energy difficulties faced by South Africa and the Karoo region - the proposal combines the ancient practices of terrace agriculture, astronomy and solar observance with the modern day technologies of solar energy harvesting. The masterplan arrangement, its axial pathways and internal orientations are calibrated to the positions of the celestial objects within our solar system at the time of opening." Image and caption copyright John Cook.

Figure 2.2 CSP Plant Deconstruction: 2100-2105 "After the 60 year life expectancy of the CSP apparatus expires, the energy infrastructure is de-constructed, and the estate remains operating as a series of vineyards." Image and caption copyright John Cook.

Figure 2.3 CSP Plant Decomposition: 2200+ "By 2200, the plants building materials begin a sequence of planned and choreographed decomposition- as the buildings ruins reconfigure

and settle, the celestial alignments and orientations of the CSP landscape are unveiled."

Image and caption copyright John Cook.