

**IN  
THE  
ABYSS  
OF  
THE  
INFINITESIMALLY  
SMALL**

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In Andreas Cellarius's mid-seventeenth-century engraving *The Southern Hemisphere and Its Heavens*, what appears to be a vast globe occupies the centre of the frame.<sup>1</sup> The globe is divided symmetrically along its vertical axis by the line that is formed by the spine of the atlas into which the print is bound. Upon the hemisphere that faces us we can make out landforms – the most prominent inscribed “TERRA AVSTRALIS INCOGNITA” – but they are largely obscured by the pattern of star constellations, below whose array of points a menagerie of zodiacal emblems is vividly rendered, crowding the sky. It is as if, in gazing at the sheets of the atlas, we are magically transported above the stars in order to look down at a planet upon whose surface swarms a mass of creatures, including the winged horse Pegasus and the splendid sea-monster with gaping maw that occupies the middle of the print. Within the rectangular frame of the engraving, the globe rests upon a flat surface onto which it casts a shadow. Above, to either side, cloud-borne arrangements of putti and winged grotesques hold sheets of fabric upon which appears the title of the print. Lower down, on either side, two groups of figures stand, evidently within a town, as if the colossal globe was physically situated within a square or piazza. On the right, a turbaned figure points to the base of the globe, past a seated man who is taking measurements with a pair of dividers upon the surface of a much smaller sphere. On the left hand side a group of figures busy themselves with instruments, most notably a kneeling man who gazes through a long telescope, the end of which seems almost to touch the circular perimeter of the hemisphere at which he is looking.

Jumping forward a little over 150 years, but to another engraving, we find a strikingly similar arrangement, although this time to do with

<sup>1</sup> Andreas Cellarius, *Atlas Coelestis seu Harmonia Macrocosmica* (Amsterdam, 1660).

the microscopic. Again we have a figure that stands outside a circular planet-like form, holding an optical instrument that touches the rim. The woman, bonnet instead of turban on head, has stopped looking into the eyepiece however, and now – turning toward us – grimaces with horror at what she has seen. The caption “MONSTER SOUP” tells us that we are looking at a drop of magnified water as it is supplied by the London Water Companies, to whom the print is dedicated. The etching shows us what the woman has glimpsed through the microscope she holds, but it is also illustrated as if projected upon a wall, as was the case in the solar microscope shows that were hugely popular at the time. Out of the right hand of our horrified viewer falls a tea-cup, spilling its contents and with it a multitude of hideous animacules of the kind depicted within the monstrous phantasmagoria of the lens’s circular frame. This “microcosm” is surely a depiction of the microscopic as an alien world. The obstetrician and palaeontologist Gideon Mantell would make the same allusion when he wrote in 1846 that “the air, the earth, and the waters teem with numberless myriads of creatures, which are as unknown and as unapproachable to the great mass of mankind, as are the inhabitants of another planet.”<sup>2</sup>

The glimpse of the drop of Thames water as a planet participates in the same kind of play of ideas and concerns that motivates Voltaire’s *Micromegas*. Not only is the drop presented to us as something that is to be understood as, at the same time, both vast and minute, but it also suggests the idea that the recognition of that immensity is limited by the capacities of our sense organs. It may be the case that something is vast not because it is large, but because it is too small for us to see and recedes into the limitless magnitude that is described in Voltaire’s text

<sup>2</sup> Gideon Mantell, *Thoughts on Animacules; Or a Glimpse of the Invisible World Revealed by the Microscope* (London: John Murray, 1846), p.7.

as “the abyss of the infinitesimally small.”<sup>3</sup> If, in the 1828 engraving by William Heath that we have been discussing, the circular frame of the image that results from the microscope lens produces a planet-like effect, then when the exiled Sirian, Micromegas, undertakes his inter-planetary journey in Voltaire’s story, we feel almost as if it is a case of travelling between different degrees of magnification and resolution akin to the variations offered by a multi-lensed microscope. When on the Earth it happens that Micromegas breaks his diamond necklace during a heated discussion with his travelling companion from Saturn. However, this turns out to be for the good, as the enormous diamonds serve as excellent microscope lenses. It is with the aid of one of these, 2,500 feet in diameter, that Micromegas is able to spy a miniature leviathan, a whale that wriggles below the surface of the Baltic Sea and which, carefully extracting, he lifts up and places on his thumbnail.

Micromegas is gargantuan, a colossal being 120,000 feet high, beside which his philosophical travelling companion, the Secretary of the Saturnian Academy, himself only 6,000 feet tall, appears as a dwarf. When they stand upon the Earth, they experience its mountains as mere roughnesses that trouble the soles of their feet and Micromegas’s head disappears far above the clouds. Their circumnavigation of the globe takes 36 hours. As Micromegas far exceeds his Saturnian interlocutor in size, so too is the latter dwarfed by the Sirian’s sensorium (an array of nearly 1,000 senses, which still leave “a vague longing, a sort of uneasiness, which constantly reminds us how insignificant we are and that far more accomplished beings exist”),<sup>4</sup> his longevity (expected to be 105,000 years), and so on. Yet Voltaire’s text

<sup>3</sup> Voltaire, “Micromegas: A Philosophical Story” in *Candide and Other Stories* (Oxford: Oxford University Press, 2006), pp. 89-106; 100.

<sup>4</sup> Voltaire, “Micromegas”, p.92.

establishes these prodigious characteristics in order to, in turn, immediately relativize and thus deflate them, a gesture signaled in advance by Micromegas's name (which Voltaire's critics would in turn apply to the writer himself).<sup>5</sup> Throughout the story, the giant beings seem to have an epistemological edge over smaller creatures – and the greater the differential in size, the more marked this is – yet, at the same time, they soon draw up against the limits of their knowledge, as seen in their encounter with a boatload of what are, for the giants at least, literally microscopic philosophers. Certainly Voltaire uses the equanimity of Micromegas and his somewhat hotter-headed fellow traveller to satirize the assorted philosophical doctrines that are described to them and to emphasize the futility and savagery of the pursuit of wars that are “all about a few lumps of earth ... no bigger than your heel.”<sup>6</sup> In this way the incredulous travellers, who play the role of bemused ‘others’ not habituated to human violence, act like the Houyhnhnms, Jonathan Swift's ideal society of horses who are appalled at Lemuel Gulliver's descriptions of weaponry. However, through a reversal, Voltaire immediately collapses the distinction that he has constructed. Outraged at what he hears, Micromegas declares: ““Oh you wretched people ... How can one conceive of such mad fury, such pointless violence? I feel like taking three steps forward and crushing this whole anthill of ridiculous assassins just like that, one, two, three.””<sup>7</sup>

If there is any certainty to be derived from Voltaire's *Micromegas*, it is that of the need and necessity of being in a condition of uncertainty. As such, the tale is profoundly suspicious of any assumption of pre-eminence, and this is a suspicion that is inscribed in the contradic

<sup>5</sup> “It must, indeed, be confessed, that his character was like his talents, unequal, and that the expression, little great man, which he made use of in his *Micromegas*, to ridicule Fontenelle, was applicable to himself both as a man and a writer”: L. M. Chaudon, *Historical and Critical Memoirs of the Life and Writings of M. de Voltaire* (Dublin: L. White, etc., 1786), p.267.

<sup>6</sup> Voltaire, “*Micromegas*”, p.103.

<sup>7</sup> Voltaire, “*Micromegas*”, p.103.

tory and self-undoing character of the protagonist's own name. Moreover, this commitment affects the way the interaction of the senses with the microscopic is narrated in the story, whereby the travellers' mode of apprehension moves from the optical to the auditory and then back to the optical, although now the direction of the gaze has been reversed and it is the travellers who find themselves the objects of the miniscule philosophers' instruments.

When Harry Lime delivers his famous monologue from the top of Vienna's Prater Wheel in Carol Reed's *The Third Man* (1949), it is prompted by the experience of a non-reciprocal visual relationship in which the black marketer, who deals in diluted penicillin, looks down upon people in the fairground far below that have, through distance – a distance that immediately takes on an ethical consequence – been reduced to specks: “Would you really feel any pity if one of those dots stopped moving for ever? If I offered you £20,000 for every dot that stopped, would you really, old man, tell me to keep my money? Or would you calculate how many dots you could afford to spend – free of income tax, old man, free of income tax?” This is a theme with a longstanding lineage, and it resonates through the history of forms of elevated and technologically-distanced visibility, whereby an apparently transcendent vantage-point is gained and a relation of dispassion instituted. This effect is powerfully conveyed in a passage from Antoine de Saint-Exupéry's memoir of his experiences as pilot during World War II: “All I can see on the vertical are curios from another age, beneath clear, untrembling glass. I lean over crystal frames in a museum; I tower above a great sparkling pane, the great pane of my cockpit. Below are men – protozoa on a microscope slide ... I am a scientist, and

<sup>8</sup> Antoine de Saint-Exupéry, *Pilote de guerre* (Gallimard: Paris, 1942), cited in Paul Virilio, *War and Cinema: The Logistics of Perception* (Verso: London, 1989), p.71.

for me their war is a laboratory experiment.”<sup>8</sup>

These fantasies of pre-eminence are founded in what is a purely visual relation that drains the beings that it sees of any subjectivity, reducing them to objects, and stimulates a sense of omniscience on the part of the observer. This dominance of the visual in the experience of small things is an issue that we find foregrounded in Susan Stewart’s perceptive reflections on the miniature, although here the emphasis falls on the estrangement of the viewer from the miniaturized world upon which he looks down, an estrangement that is, as it were, the reverse side of pre-eminence. Miniature things, she argues, conjure dreams of interiority, timelessness and – in their objecthood – a deathliness that is beyond death. According to Stewart, the miniature places the observer in a transcendent position in relation to it and thus, as she puts it, “all senses must be reduced to the visual, a sense which ... remains ironically and tragically remote.”<sup>9</sup> Thus, she notes, when Swift’s Gulliver visits Lilliput, it is his eyes that are most frequently threatened and in hazard, this being emblemized when the verdict of execution is stayed and commuted instead to blinding.

What is striking then, when we turn back to Voltaire, is the way in which the ear and its powers of hearing – aided through an ear-trumpet made of a thumbnail clipping, the auditory equivalent of the diamond microscope – destabilizes the prior assumptions made by the eye and ushers in a recognition of the agency of what had hitherto been seen as “mites”. And, as already noted, this leads to a noteworthy reversal of subjection: “‘A thousand fathoms!’ cried the dwarf [the Saturnian]! ‘Good heavens! How can he possibly know my height? A thousand fathoms! He is not an inch out! What! Measured

<sup>9</sup> Susan Stewart, *On Longing: Narratives of the Miniature, the Gigantic, the Souvenir, the Collection* (Durham and London: Duke University Press, 2003), p.67.

by an atom! He is a geometer, and he knows my size while I have only a microscope to observe him with, and I do not yet know his!”<sup>10</sup> What is very small has suddenly expanded to become strangely large.

At the end of the story, the two travellers collapse into convulsions of laughter on being told by a theologian that the cosmos has been made uniquely for man. Not only does their laughter deflate yet another presumption of pre-eminence, but it is a response that expresses the mixed and contradictory status of Micromegas and his friend. Voltaire tells us that they laughed “that irrepressible laughter which, according to Homer, is the portion of the gods.”<sup>11</sup> But this seems to slyly mislead us for, as Charles Baudelaire would later point out in his essay on comic form, laughter – which is alien to the absolute (Baudelaire observes “that the sage of all sages, the Incarnate Word, has never laughed”)<sup>12</sup> – is a property of contradictory creatures, which are both elevated and abject: “it is at one and the same time a sign of infinite greatness and infinite wretchedness.”<sup>13</sup> When Micromegas recovers to feel “a trifle vexed to see that beings so infinitesimally small should have a degree of pride that was almost infinitely great”, it is a vexation that to some degree tells against himself as well.<sup>14</sup>

The final joke is of course the book of philosophy that Micromegas promises to give to the terrestrial philosophers, which will set out for them “what was what”. But when it arrives at the Academy of Sciences in Paris, it appears to consist only of blank pages. Given the themes and events of Voltaire’s story, we are led to imagine the possibility of

<sup>10</sup> Voltaire, “Micromegas”, p.101.

<sup>11</sup> Voltaire, “Micromegas”, p.106.

<sup>12</sup> Charles Baudelaire, “Of the Essence of Laughter, and Generally of the Comic in the Plastic Arts” in *Baudelaire: Selected Writings on Art and Artists* (Cambridge: Cambridge University Press, 1981), pp.140-161; 142.

<sup>13</sup> Baudelaire, “Of the Essence of Laughter”, p.148.

<sup>14</sup> Voltaire, “Micromegas”, p.106.

some micro- (or even macro-) logical script that, in some way, exceeds the powers of perception. But perhaps, more pertinently, what Micromegas delivers to the savants is in fact a treatise that is grounded in a commitment to uncertainty, and that consequently takes its most radical and rigorous form.