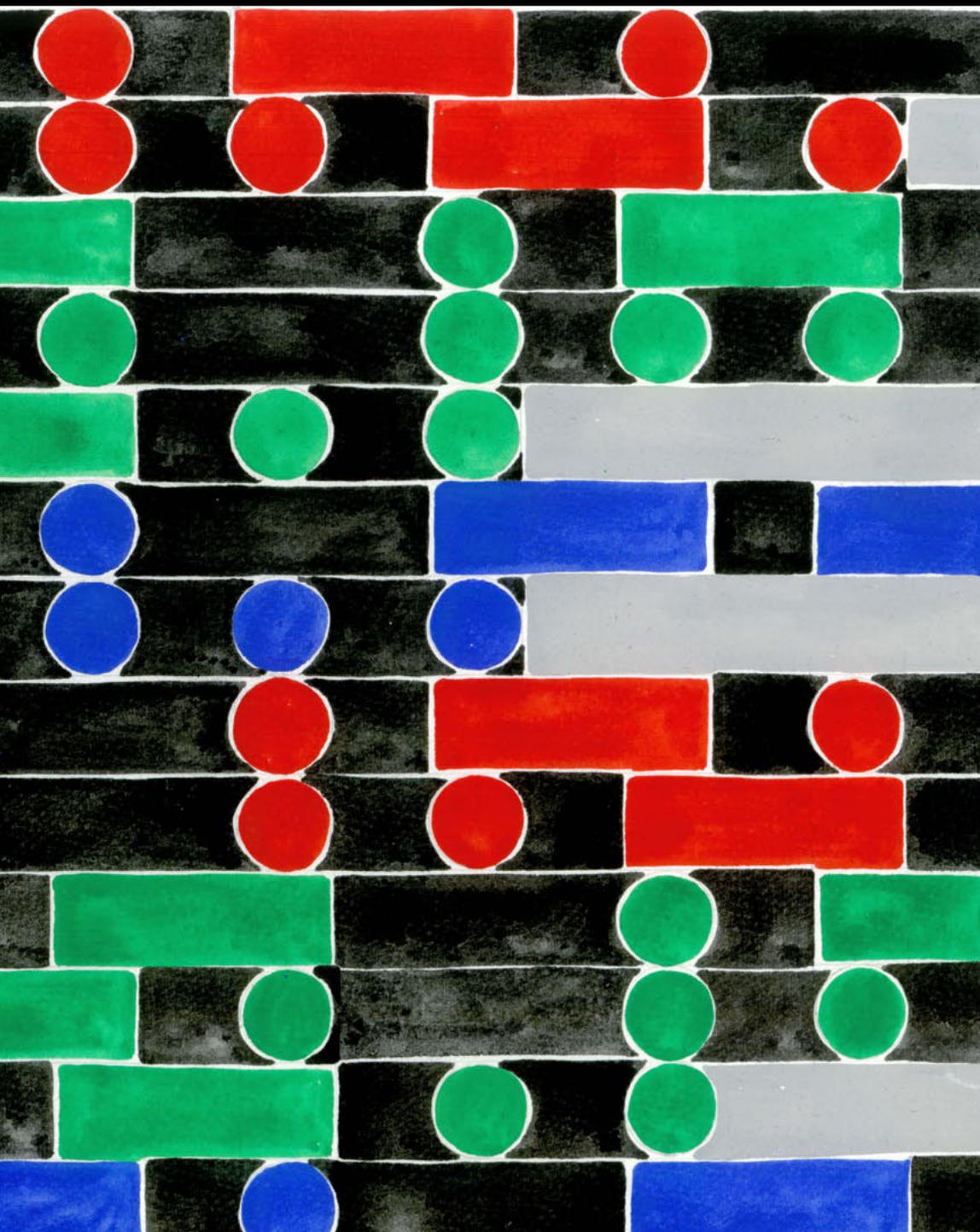


WRITING, MEDIUM, MACHINE
MODERN TECHNOGRAPHIES
EDITED BY SEAN PRYOR AND DAVID TROTTER



Writing, Medium, Machine

Modern Technographies

Technographies

Series Editors: Steven Connor, David Trotter and James Purdon

How was it that technology and writing came to inform each other so extensively that today there is only information? *Technographies* seeks to answer that question by putting the emphasis on writing as an answer to the large question of ‘through what?’. Writing about technographies in history, our contributors will themselves write technographically.

Writing, Medium, Machine

Modern Technographies

Sean Pryor and David Trotter



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2

Stereopticon

KRISTEN TREEN

A Semblance of Sanity

In May of 1865, a member of the Philadelphia Photographic Society (PPS) spent an evening in the Pennsylvania Hospital for the Insane. Invited rather than committed, the photographer had been given permission to observe one of the stereopticon ‘entertainments’ with which the Hospital’s superintendent, physician and reformer Thomas Story Kirkbride, was attempting to ‘cure’ the men and women in his care. The treatment seemed to be working, for, with one eye on the stereopticon show and one on the audience, the photographer was ‘delighted by what I then saw’. ‘The audience’, he told his fellow enthusiasts, ‘was a model audience, so quiet and so attentive’:

Dr Lee read to them from some book of travels in Rome, and as he read, the various scenes about which he was reading were thrown on the screen in a circle of light, eighteen feet in diameter. The dissolving effect was well managed, and occasionally, during pauses of the reading, and while the pictures were being shown, music was introduced to vary the entertainment. Familiar as I am with exhibitions of this class, I never passed a more agreeable evening. (‘Photographic Society of Philadelphia’ 1865: 120)

The man from the PPS had no problem quietly cordoning himself off from ‘them’ – the beneficiaries of Dr Lee’s readings – and ruining, somewhat, the integrity of this ‘model’ audience. But he couldn’t quite find his way to separating the process that wrought the patients’ psychological metamorphosis from the mechanical workings of the machine itself. Ill-equipped to describe the operation with which the stereopticon was meant not simply to amuse these patients, but to restore their powers of restraint and reason, this technologically-minded observer found that a meticulous description of the stereopticon’s clear focus, varied display, steady function, and ‘well managed’ mechanism did just as well. Photographic images of Rome and its

treasures were displayed, magnified, on a clean white screen: unremarkably ‘familiar’ as the account might sound to the seasoned stereopticon spectator, this photographer – and, indeed, the numerous physicians implementing this novel treatment – implied that the operations of a ‘model’ mind might somehow correspond with exposure to the stereopticon’s particular mechanisms, its visual effects. This photographer’s account, in other words, let the stereopticon speak for itself.

The PPS photographer wasn’t the first rhetorically to elide the stereopticon lantern’s novel workings with those of a healthy mind: the stereopticon had been used to exhibit sanity for almost a decade before the PPS photographer paid his call. In fact, its incorporation into Kirkbride’s Moral Treatment scheme took place shortly after the invention of its key component, the photographic slide. The stereopticon’s story began with the innovations of brothers William and Frederick Langenheim, of Philadelphia, PA, whose experimentation with glass as a material upon which photographic negatives could be developed made photographic lantern slides – or ‘hyalotypes’, after the Greek for ‘glass’ – possible (Musser 1994: 30). Where previous projectors relied on hand-painted slides to entertain small audiences public and domestic, this machine brought the marvels of magnified photography to the masses, beginning officially with the Langenheims’ audiences at London’s Crystal Palace Exhibition of 1851 (Wells 2008: 13-15; Layne 1981: 195). Glass slides set the scene for the innovation of the magic lantern itself. By 1860, Massachusetts chemist and businessman John Fallon had coined the term ‘stereopticon’ in naming the large biennial lantern he imported from England and improved significantly. This lantern used powerful calcium limelight, oxy-hydrogen, or electric light to project photographic images of between twenty-five and thirty feet in diameter before music- and lecture-hall crowds (Figure 1) (Wells 2011: 5-6). Remarkable for retaining an extraordinary clarity of image, the stereopticon also delighted audiences with its innovative use of a dissolving effect between slides, which the stereopticon’s double lenses, stacked one above the other, made possible. Refining the primitive effects of the older lantern’s shake and slide, the stereopticon’s dissolve appeared in almost every eyewitness account of the machine’s entrancing scenes, including that of the PPS photographer who found himself enjoying their effect among the Hospital’s curious congregation.

The Hospital had been reaping the benefits of stereopticon shows long before they became popular with the general public. A chance acquaintance with the Langenheim brothers in the early 1850s led Kirkbride to introduce the stereopticon shows into the Pennsylvania Hospital’s pioneering Moral Treatment scheme as early as 1851 (Layne 1981: 196). Before long, photographic displays of European artworks, North American landmarks, and even of the Hospital’s own grounds had become staple evening entertainments in a programme of therapy which replaced an asylum culture of commonplace physical restraint and punishment with ‘[t]he most inflexible firmness [...]

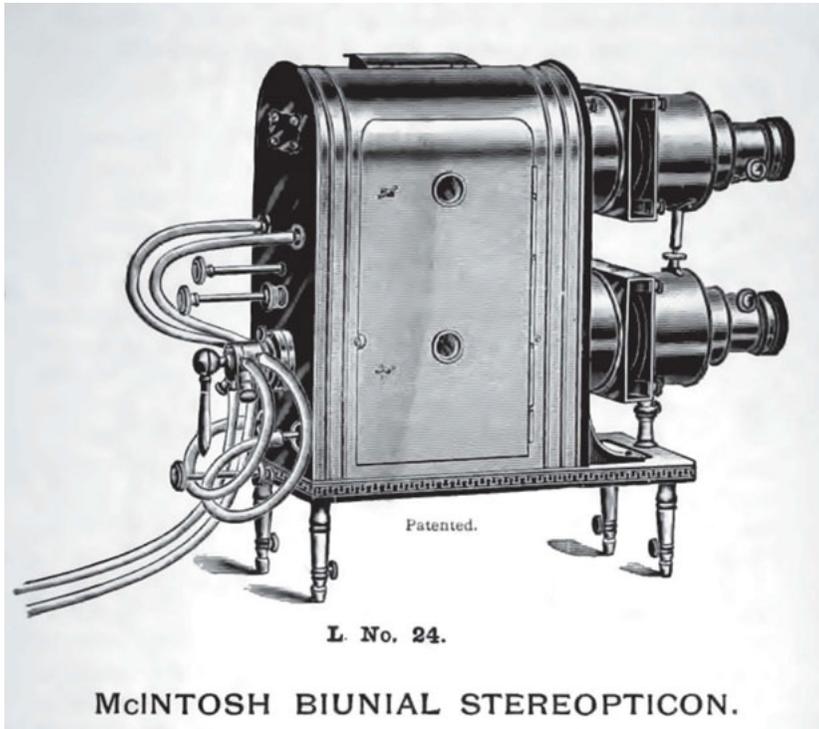


Fig. 1. The McIntosh Biunial Stereopticon. 1895. *Illustrated Catalogue of Stereopticons, Sciopticons, Dissolving View Apparatus, Microscopes, Solar Microscope and Stereopticon Combination, Objectives, Photographic Transparencies, Plain and Artistically Colored Views and Microscopical Preparations*, p. 32. Chicago: McIntosh Battery & Optical Co.

combined with never-failing kindness and gentleness and sympathy' (Haller and Larsen 2005: 261; Bucknill and Tuke 1862: 546). Unlike their draconian forebears, proponents of the Moral Treatment believed that mental illness was an affliction that the patient could be helped to manage, given the right habit-forming occupations. 'The patient is to be taught habitual self-control, by habitual indulgence', wrote English psychiatrists Bucknill and Tuke, and while the physical routines of gardening and gymnastics had served Kirkbride's purposes well enough, his records of the stereopticon's successes suggest that it was clearly a habit of a different order (Godbey 2000: 36).

Regarded early on as an effective tool in wresting what one Hospital manager described as "'minds diseased" [...] from their gyrations, – their never ending rotation upon the point of fallacy', the stereopticon's gift to psychiatry was the rhetoric of its movements, the habits it might pass on to the mentally ill ('Extract of a Letter' 1852: 292).

For the language of insanity was the language of erratic shifts, abrupt transitions, obsessive gyrations, and lethargic depressions, which filled the

American Journal of Insanity's pages. Nineteenth-century psychiatrists agreed with John Locke's view, expressed in *An Essay Concerning Human Understanding*, that 'mad Men [...] do not appear [...] to have lost the Faculty of Reasoning; but having joined together some Ideas very wrongly, they mistake them for Truths' (Locke 1975: 160-61). Such was their point d'appui for imagining more precisely the abnormal ruptures, conjoinings, and motions that affected the so-called 'diseased' mind. Prized for its narrative capabilities, and for the startling clarity of its content, the stereopticon struck the psychiatric eye as capable of creating the environment necessary for the cultivation of rational thought, and of projecting the emulable movement of that model thought on screen.

Halting the troubled mind's gyrations, the stereopticon's measured display of slides, fed manually through the machine, assumed a narrative thread of associations with or without an accompanying lecture to bridge the gaps. In fact, thanks to its dissolve effect, the stereopticon seemed to leave no gaps at all as it moved seamlessly between images. There was no potential for darkness and distraction, for the 'lesion[s] in the association of ideas' that physician-philosopher Louis Francisque Lélut associated with insanity, and that the Moral Treatment sought to suture (cited in Bucknill and Tuke 1862: 75). What was more, the magnification of photographic images brought about an unparalleled reality effect, that, as Kirkbride himself noted, 'give[s] us every object in a landscape, every leaf and twig, every blade of grass [...] with a degree of perfection no artist could hope to effect' (Kirkbride 1863: 57). At the same time as it impressed the social responsibilities of the 'model' audience upon its spectators, who often shared their auditorium with Hospital staff and the visiting public, the stereopticon would impress images of reality writ unavoidably large upon the wandering mind, in the hope that the purposeful progress of the life-sized, the face-to-face, the enormously real would leave its mark. The visual shaped the cognitive; the right kind of visions could set the wandering mind straight. 'If new objects of thought are not only presented to, but impressed upon the mind', wrote Bucknill and Tuke of Moral Treatment's claims to rearrange disturbed thought, 'if employment is made to replace inertia, cheerful society and recreation to replace moping dulness, new trains of ideas become the habit of the mind, and the subjects of delusion gradually fade in the perspectives of memory' (Bucknill and Tuke 1862: 555).

Kirkbride would have agreed that 'the subjects of delusion gradually fade in the perspectives of the stereopticon', for the machine seemed not only to correct habits of mind, but also to externalise the healthy movement of thought itself, from one discrete image to another. It certainly wasn't the first time that photographic or projecting technologies had been used to picture thought's daily processes, or the mind's responses to external phenomena. As Emily Godbey has shown, the asylum movement rooted its conception of the healthy mind in the Lockean doctrine of human understanding, which had famously used the *camera obscura* to delineate the relations between 'external

and internal Sensation' and the '*dark Room*' of the mind (Godbey 2000: 52-3; Locke 1975: 163). Illuminating the mind's 'Closet wholly shut from light', these sensations projected 'external visible Resemblances, or *Ideas* of things without' into its darkness: 'Pictures', which 'stay there, and lie so orderly as to be found upon occasion' within memory's slide-box, as it were (Locke 1975: 163).

While Locke separated 'objects of sight and the ideas of them' into an 'orderly' system of images to be reprojected, the proponents of the Moral Treatment drew on theories of the Scottish Common Sense philosophy to make Locke's rigid set of 'pictures' a little more malleable. In its thesis that, together with Lockean sensory accrual, humans were 'born with innate propensities that could be molded by experience', the Common Sense philosophy made it possible to envisage reconditioning the thoughts that strayed from their Lockean arrangement (Godbey 2000: 52). Bringing new movement to the *camera obscura*'s magnifications, the stereopticon embodied an intersection of the psychological philosophies that defined American psychiatry at mid-century.

In doing so, however, it became a means – for nineteenth-century practitioners of remedial psychiatry and for media historians alike – of reasserting the enduring conviction that the τέχνη of emerging photographic technologies could be found in their value as *ordering* mechanisms. Ordering mechanisms, moreover, with a claim to authority rooted in the apparent transparency of the photographic image. With transparency comes immediacy: when the rhetoric of the machine converges too neatly with reality's expectations, the medium itself begins to disappear, validating the rhetoric of order into which it disappears. The medium arbitrates successfully – the stereopticon cures and displays curedness – to the point of self-effacement, and the order it establishes is insidious but absolute. Indeed, until now the stereopticon has been routinely incorporated into the line-up of technologies labeled as essential mechanisms within the larger apparatus of institutional power. Kirkbride's experiment has been likened to panoptic surveillance, and his innovative use of photography in the asylum compared with the photographic categorization of mental 'diseases' undertaken by his contemporaries in European psychiatry (Haller and Larsen 2005; Godbey 2000).

Yet beyond the asylum's walls, the stereopticon's beguiling progress would challenge conceptions of consciousness and of order, just as it would leave its audiences with the strange sense that they had been caught-up in the haze of a dream. Untempered by pre-existing discourses of health and sanity, the public's stereopticon was innovator rather than conservator, a technology that gave rise to sensations of dissonance and mixed metaphor in equal measure. Telegraph, flying carpet, rolling clouds, miracle pure and simple: unable to put their fingers on the stereopticon's wondrous transportation of sight and mind, its spectators found that the machine's magnifications and dissolves dispersed and reimagined the possibilities of the real with every passing slide.

Indeed, both effects turned the spectator's attention, with a new intensity, to the unseen world around them: to the fibres of existence revealed by the stereopticon's unparalleled magnifications; to the connections that bound individual to audience and to an ever-expanding democratic nation; to the processes driving the mind between thoughts, filling the gaps in a way that the stereopticon's dissolves made suddenly conspicuous. And by the end of the century, the stereopticon had become a linguistic mechanism with which literature and Pragmatist philosophy registered their encounters with the dissonances, the chaotic relationality, of the modern American consciousness.

Magnify

At first, the stereopticon appeared to be living up to Kirkbride's rhetoric of improvement. The machine's debut tour had elicited favourable reviews where its instructive potential was concerned. When the stereopticon's inventor John Fallon partnered-up with showmen Peter Abel and Thomas Leyland to exhibit the first public stereopticon lecture shows across the Northeast, the magnifying machine he had developed with his chemist colleagues in mind quickly gained a reputation for the scientific realism it brought to popular spectacle. '*Photographic, optical, and chemical science* have here combined to bring the very ends of the earth near to us, in something like their natural aspect', declared one enthusiastic reviewer for the *Salem Gazette*, whose accolade appeared in a pamphlet produced by Abel and Leyland's publicity outfit. This was upmarket entertainment, the wonders and curiosities of the world unveiled with an accuracy capable, as the *Gazette's* correspondent eagerly emphasised, of 'educating and elevating the popular taste.' 'We often lament', repined the same reviewer,

that in a land like our own, where art is yet in its infancy, masterpieces of sculpture and painting are so rarely seen by the masses [...] But with the apparatus of which we have been speaking, a gallery of choicest sculpture may be carried to any New England village, and its matchless marbles displayed to all the people [...] We are confident that all who are interested in the education of the young, and in the cultivation of a pure taste and love of the beautiful among all classes, whether young or old, will appreciate the claims of the performance upon their approbation. (Haynes and Leyland 1863: 4-5)

As its singular clarity opened America's eyes to the Old World's treasures, so the stereopticon's vast views, accessible to unprecedentedly vast congregations of 'all classes, whether young or old', promised to transform its audiences into an apparatus fit to refine the sensibilities of its individual components, in a way Kirkbride would no doubt have endorsed. Yet Kirkbride had hoped that

each individual in the asylum would internalise the restrained behaviours they learned in the shadows cast by the stereopticon's glare. The displays of lecture and music hall were understood, by comparison, to be gregarious in the extreme, generating a vivid sense of a *shared* visual experience. Advertisements boasted of improbably large audiences held spellbound by an impossible lantern of immense proportions, while the *New York Journal of Commerce* compared the stereopticon to its more famous cousin, the handheld stereoscope, noting that the 'delight which one person has when looking through the stereoscope a thousand persons can have at once – so that there is sympathetic and social pleasure' (Wells 2011: 5-6; Haynes and Leyland 1863: 12). The stereoscope induced the observer to peer into its eyepiece to partake privately of its seemingly solid photographic views, 'look[ing] selfishly at the show with your personal eyes', as the *Salem Gazette* admonished. The stereopticon, by contrast, equipped viewers with public eyes: lifting hundreds of faces in unison, it brought into being for the first time a 'sympathetic' collective connected by photographic realism writ large for public inspection.

If the stereopticon was a democratiser, then the democracy was in the detail. The stereopticon's examples of superior realism intensified the spectator's relation to those sitting around them, but they also altered the spectator's relation to the life unexpectedly exposed on screen in all its particulars. To the spectator accustomed to the magic lantern's hand-painted scenes, or what the *Rochester Express* called the panorama's 'eye-trying daub', the photographic feats of the stereopticon laid its subjects bare with a clarity that seemed to make visible the connective tissues of the world around them (Haynes and Leyland 1863: 14). To an extent, this had to do with the spate of overtly scientific shows that fascinated audiences by projecting slides containing microscopic organisms, including fleas, ticks, and even, at one display in Philadelphia, the contents of a small aquarium: fish, water, and all (Godbey 2000: 59, 63; Musser 1994: 32). The sudden disclosure of the unseen physical world was admittedly wondrous and grotesque by turns, but rather than induce audiences to regard what they saw as the stuff of curiosity and freak show, the scientific element prompted uncanny moments of self-examination.

One short story by an anonymous writer for the *Milwaukee Daily Journal* evoked the scientific stereopticon's 'great fiery eye' to imagine the infinitesimal lives and adventures of 'two charming little animalculas' named Ra and Ro. 'An Infusional Romance' began by registering the sense of 'horror' attendant on the revelation 'that, in the indiscreet glare of the magic lantern, the finest maiden's tress resembled the primeval giant of the forest, that the most delicate lace was made of rough cables, and that that romantic storied personage, Mr de Fly, Jr, was a blood-thirsty monster as large as an elephant' ('An Infusional Romance' 1887: 3). In offering a view of the trials suffered by Ra and Ro in their attempts to join (literally) in holy matrimony – at the end of the story the limelight threatens to evaporate their watery world altogether – the story

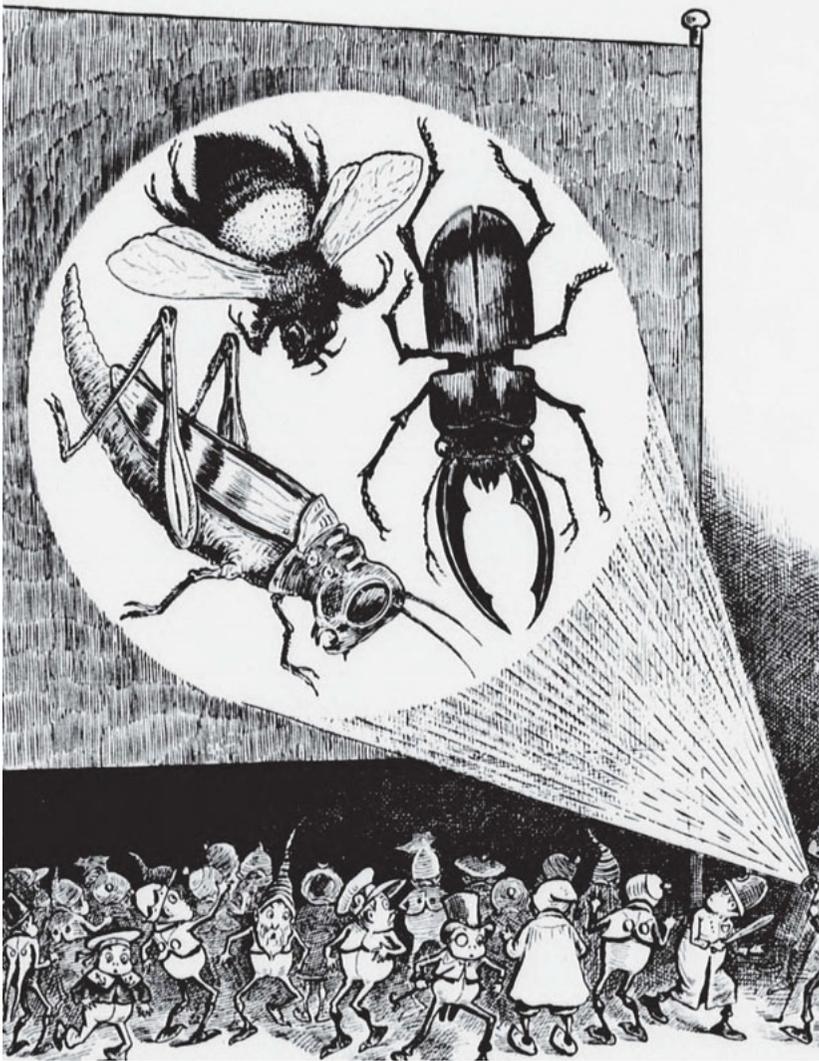


Fig. 2. 'And next, the Brownies gathered round / A stereopticon machine / That cast its rays upon a screen. / A thousand times it magnified, / Till, stretching out on every side, / An object large and larger spread, / And filled the gazing group with dread.' Palmer Cox. 1890. *Another Brownie Book*, pp. 9-10. New York: Century.

envisioned the infinite expansion of the known world, even as it broached the possibility that the stereopticon was capable of revealing more about life's intimacies than one might care to know. It was a feeling that Canadian cartoonist Palmer Cox captured in an 1890 cartoon for his popular series *The Brownies* (Figure 2). During the Brownies' visit to the Academy (which precedes their visit to Niagara Falls, their trips by locomotive and tugboat,

and their excursion up a canal), microscopic becomes uncannily macroscopic: grouped in inattentive chaos beneath a screen that dwarfs them to the size of insects, Cox's brownies wriggle and squirm, larval beneath the stereopticon's glare. The audience is as much of an entomological specimen as the bright beetle, bee, and locust on screen, all of which turn their ocelliform gaze upon the peculiar figures below.

The feeling of being scrutinised beneath a microscope wasn't limited to scientific shows, either, and its insidious influence was connected to the strange optical illusion for which the stereopticon had become famous. Since the stereopticon's first shows, audience members had reported a perceived solidity to the sights they were shown that simply didn't exist. In part, this illusion of solidity (the 'stereo' part of 'stereopticon') had to do with the machine's hybridity where kit was concerned: stereopticon operators often fed one half of the stereoscope's double view before the limelight, and the three-dimensional effect enjoyed by stereoscope viewers was transferred visually just as 'stereo' was transferred verbally. The projection of small details, and of art and statuary against black backgrounds, also seemed to throw the photographic subject into relief. Reviews of statuary shows commonly waxed lyrical about the 'roundness' of the ancient marbles on screen. Eager to grasp the stereopticon's miraculous revelations, a reporter for the *Norwich Bulletin* put his finger on the curious quality of the stereopticon's absorbing detail as he reviewed Fallon's display of European art and architecture:

The scenes were various – now a public edifice, minutely perfect, even to the stains and finger marks upon its walls; now a ruin, upon which you could almost trace the depredations of the last visitor; now an interior view of a palace or cathedral, with its beautiful play of light and shade; now a landscape or a waterfall bursting in mist from the canvas; now a statue, more perfect if possible than the original, art glorified by science as it were, dead marble brought to life; [...] What pleasure is derived from looking at Stereoscopic pictures is increased a hundred fold in viewing the same pictures as presented in magnified proportions by the Stereopticon. (Haynes and Leyland 1863: 9)

In opening up expanses and interstices, and with them the potential for personal exploration, the stereopticon seemed to match the 'pleasure derived from looking at Stereoscopic pictures'. Or, rather, it bettered it by presenting life-sized spaces into which spectators might project themselves. Offering individuals the opportunity to reassess their grasp of the world before them, the stereopticon's haptic allure became a tool in the manufacture of democratic expansion. Views of southern California drew the gaze of East Coast audiences in 1874 'for the purpose of inducing emigration thither': absorbing manifestations of agriculture and landscape, like those of 'dead

marble brought to life', became substitutes for tentative travel, their brilliant progress across the screen guaranteeing Manifest Destiny's advance across the country ('Amusements' 1874: 8).

Yet lurking at the edges of awe and marvel was a disquieting awareness that the stereopticon might show too much, might be *too* democratic in the details it conjured for hundreds of curious eyes. This unsettling hyper-democratic insight marked the report of the *Norwich Bulletin*, whose descriptions of 'stains and finger marks' blemishing the walls of magnificent edifices, and 'the depredations of the last visitor' upon ancient ruins, left the seamy impression that the Old World's treasures had suffered over-exposure to an eager spectatorship. Saving graces there surely were: of beauty to counter the 'stains and finger marks' of gawking hordes, of 'art glorified by science' to shine where the whimsical plundering of relic-hunting individuals advertised the damage that consumers could so easily do. But even these brought the desires, the impulses of the individual mind into the equation: the desire to grasp, to touch, to claim an embodied relationship to the objects on the screen that not only offered themselves, but overwhelmed the field of vision to the extent that reality itself seemed temporarily removed. Recalling a stereopticon display at master showman P.T. Barnum's Museum, one observer found himself taken in by images of statuary 'so exact that the spectator forgets that he is looking upon canvass [sic], and feels half-inclined to step upon the stage to get a back view of the images' ('Barnum's Museum' 1863: 2). To be lured onto P.T. Barnum's stage – home of 'freak' and grotesquerie – let alone on to any other, was to have one's curiosity turned curio, one's desires unveiled before eager eyes. Therein lay the difference between the haptic allure of the stereoscope's miniature views and those offered by the stereopticon: where, as Jonathan Crary has argued, the parlour stereoscope's intimate play with haptic illusion 'quickly turned into a mass form of ocular possession', the stereopticon's engrossing visions seemed quite capable of possessing the viewer and putting them on display (Crary 1990: 127).

In the hands of author Charles Barnard, whose serialised novel *Applied Science* appeared in Maine's *Bangor Daily Whig and Courier* early in 1888, it was the stereopticon, more than any other modern technology, that had the power to reveal one's innermost thoughts and desires. Here, the stereopticon plays chief foil to the secret desires of the story's protagonist, one Elmer Franklin. Elmer is a dentist-cum-gadgeteer with a penchant for adapting the latest in nineteenth-century technology for his personal use, a quirk that comes into its own as he plots to save his beloved Alma from the prospects of a marriage of convenience to a swindling rogue, Mr Belford. Throughout the narrative Elmer's 'science [is] brought to bear upon rascality' as he uses his various gadgets to gather damning evidence against his rival in love (Barnard 1888a: 4). A camera is quickly produced and put to use as ether-happy Elmer uses the cover of his dentistry day job to swipe a glance at an incriminating letter that Belford is foolish enough to carry around, while Elmer is quick to provide

his lady love with a miniature telegraphy kit when she confides to him her fears of meeting with her fiancée alone. Noble as our hero's intentions are, he too has his secrets: namely, a photographic slide bearing an image of Alma, surreptitiously taken as she sleeps. Of course, Elmer owns his own stereopticon machine, and it is this prized possession that ultimately gives him away during a conference with the troubled Alma:

Suddenly she flushed a rosy red, and a strange light shone in her eyes. The sun had sunk behind the hills, and it had grown dark. As the shadows gathered in the room a strange, mystic light fell on the ground before her. A picture – dim, ghostly, gigantic and surpassingly beautiful – met her astonished gaze. She gazed at it with a beating heart, awed into silence by its mystery and its unearthly aspect. What was it? What did it mean? By what magic art had he conjured up this vision? (Barnard 1888b: 4)

Face to face with her magnified and otherworldly self, Alma faints, giving Elmer the chance to smash the incriminating slide upon the hearth, but not before he passionately presses the glass miniature to his lips. With the shattering of the slide the 'clear headed son of science seem[s] to [lose] his self control' and begins 'to turn over his books and papers in a nervous manner, as if trying to win back control of his tumultuous thoughts'. Private thoughts once contained by Elmer's private stereopticon are thrown into chaos when they are exposed before the eyes of another. Overwhelming its subject into unconsciousness, the slide magnifies Elmer's conscious desires beyond all imagined proportion, leaving him in a state of shifted perspective and mental disarray. As it spills its piercing glare beyond the screen to illuminate its audience, the stereopticon lays bare the tangles of feeling, the disordered thoughts, by which even the most 'rational' of minds connect themselves with reality.

Dissolve

Responses to stereoptic dissolves speculated still more on the dissonances of the mind's activities. The dissolve effect with which the stereopticon caught modernity's eye had led a primitive existence in the years preceding the magic lantern's sudden development. Like many of the magic lantern's early effects – from the slip-slide through the long panoramic panning movement – the dissolve was usually achieved manually rather than mechanically. With the stereopticon, though, mechanical technique was perfected by way of a dissolving tap, which as Kentwood Wells explains, 'allowed smooth simultaneous dimming and brightening of lights in the two halves of a [biunial] dissolving lantern' (Wells 2011: 6). By adjusting the supply of hydrogen in each of the lantern's compartments, the tap allowed its operator to maintain and

gradually to dim the illuminations as the oxygen used to fuel the light's glare was turned off (6). Immersed as we are in a visual culture which has seen the dissolving haze become a staple of cinematic montage, not to mention an effect we might use to check the monotony of a PowerPoint presentation, it is not easy to imagine encountering it for the first time, or encountering it as main attraction rather than ornamental embellishment.

By all accounts, the dissolve's drift of gases – its 'soft, white clouds gathering and rolling themselves about like smoke' – was enrapturing, and not simply in the way it delighted its audiences (Haynes and Leyland 1863: 8). It was enrapturing in the sense that it transported its viewers, carrying them not only from one image to another, but seeming, too, to convey them to another plane of consciousness altogether. For Ralph Waldo Emerson, who attended his first stereopticon exhibition at the Concord Lyceum in 1860, 'the lovely manner in which one picture was changed for another beat the faculty of dreaming' (Emerson 1914: 287). Meanwhile, Oliver Wendell Holmes, Sr's first encounter with the stereopticon's hazy scatterings prompted an expression of astonishment in a letter to the showman George Reed Cromwell:

To sit in darkness and have these visions of strange cities, of stately edifices, of lovely scenery, of noble statues, steal out upon the consciousness, and melt away one with other, is like dreaming a long and beautiful dream with eyes wide open. A journey with you, is the Grand Tour, *minus* the passport and the bills of exchange. (Cromwell 1870: 26-7)

Dissolving views did away with the faltering business of crossing borders and the messy back-and-forth necessitated by bills of exchange, presenting their audiences with a mode of transportation – a mediating mist – that transcended the restrictions of time and space to bring otherwise disparate images together before the eyes. It was like watching one's own imagination at work, and the literary establishment was quick to adopt the effect as a rhetorical figure for the movements of the mind, not all of which were as carefree and listless as the dreams of Emerson and Holmes, or as reasoned as Kirkbride would have had them. One poet, who may have been responding to the early dissolves of the magic lantern, saw in these unremitting shifts and turns the transience and unpredictable mutability of affective existence. 'Life's Dissolving Views', published in the *Boston Investigator* on 31 March 1858, began by evoking life's natural course: 'Life is but an April day, / Sunned by smiles and blent with showers, / Hope's bright lamp that leads the way, / But lights the thorns amid the flowers' ('Life's Dissolving Views' 1858: 4). Drawing the year's natural cycle and those of 'Hope's bright lamp' together, the first stanza promised to unite natural rhythm and technological mechanism, and in doing so to deliver an ultimate image of order and equilibrium: 'smiles [...] blent with showers', and 'thorns amid the flowers'. By the poem's end, with 'Proud ambition [...]



Fig. 3. From ‘Sketches in New York During the Recent Presidential Election’.
1872. *Graphic*, November 30: 505.

Fade[d] to disappointment’s canker’, and ‘Pleasure [...] Changing soon to care and sorrow’, the constant dissipations of the inner life have displaced the natural order altogether, leaving the dubious figure of ‘Fate’ in its place: ‘But still although the blisses spread, / Too soon dissolve into each other, / Scarce is one remembrance fled, / Ere Fate’s replaced it with another.’

Fate: the hand that feeds the lantern’s slide; the force that drives one thought, dissolving it irresistibly into another. Under journalism’s purview ‘fate’ became the inscrutable chop and change of capricious politicians even as stereopticon shows broadcast election returns, and the tide of fickle public opinion, onto the walls of buildings across the nation’s cities (Figure 3). ‘We know not what may have influenced the President in the selection of officers’, wrote the *Christian Recorder* of Abraham Lincoln’s ongoing shuffle of military leadership during the Civil War, ‘whether guided by the party or by the discovery of their incapacity. [...] He has been busy [...] creating and disposing of them as a manager would a series of dissolving views’ (‘Our Failures and Their Causes’ 1864: 1). The same was true of public taste, and while Lincoln was chastised for his precarious play with the fate of the country, one columnist for *Frank Leslie’s Weekly* confessed surprise that the joys of Christmas hadn’t yet fallen prey to the foibles of a fashion-conscious public: ‘But in the very teeth of this condition of dissolving views and general tendency of all things old to go out and all things new to come in, Christmas has held its own. Whether we be skeptic or believer, transcendentalist or

materialist, we all believe in the creed of a yearly merry-making' ('The Reign of Santa Claus' 1879: 294).

The strange motivation of the dissolve effect became a way of addressing the unfathomable charge that drove the country through civil war and into the marketplace; that drew its citizens together into a newly collective public consciousness, propelled forward by the fashions and fads of a booming postwar consumer culture; that marked, too, individuals' perceptions of their place within a modern nation which drew their gaze with marvels at every turn. To one correspondent for the *Taunton Gazette*, this dissolving state of affairs, as represented by the stereopticon's persistent passage, verged on disorder, on dissonance, on chaos. 'But very queer and bewildering it grows at last', they wrote of Fallon's sensational machine,

this chässezing and winding of scenes through the brain. Perhaps you gaze intently at some historical horse. There is a slight criss-crossing of bars, and a huge steeple blots out the horse, and finally arrives a whole city of steeples. A strange miz-maze, wherein sea views subside into Vatican or Alhambra, and lonely ruins change hands with the palace walls of the Doges. (Haynes and Leyland 1863: 8)

Dissolves ended in solutions: the loosening of rhyme and reason to the extent that the visions moving before the observer's eyes became a chaos of impressions, 'chässezing and winding' in a nightmarish 'miz-maze' of shapes and forms. Yet this dissonance, this chaos, was exactly the solution Professor William James had been searching for as he strove to access the mechanisms of conscious thought that, to his eye, had always been restricted by philosophies of mind which oriented themselves in relation to Lockean doctrine. James turned to the dissolve effect to articulate the notion of consciousness as an ongoing rearrangement of possible relations, a continuous 'flow' of what he called the 'stream of thought'. By 'stream of thought', James referred not only to the 'substantive parts' of the conscious mind – that is, the sensorial images or thoughts that Locke had imagined projected onto the mind's screen – but to the 'transitive parts' as well, with which he denoted 'a passage, a relation, a transition *from* it [the substantive part], or *between* it and something else' (he also called them 'feelings') (James 1890: 1.243). As he attempted to discern the nature of these transitive parts, in all their feelings and relations, James was forced to admit the impossibility of a task which he compared to 'seizing a spinning top to catch its motion' (1.244). The problem with trying to describe the stream of thought, he realised, was fundamentally linguistic. For centuries, the philosophy of consciousness had set its gaze upon seemingly separate and conceptually solid substantive thoughts in a way that had shaped, and been shaped by, the workings of language: 'so inveterate has our habit become of recognising the existence of the substantive parts

alone, that language almost refuses to lend itself to any other use' (1.246). The closest our substantively-biased language could come to speaking of these 'feelings of relation' – constantly in a state of change, of rearrangement, of an ongoing disruption that seemed chaotic because of its namelessness – was in conjunctions, prepositions, adverbial phrases, the play of syntax. 'We ought to say a feeling of *and*, and a feeling of *if*, he wrote, 'a feeling of *but*, and a feeling of *by*, quite as readily as we say a feeling of *blue* or a feeling of *cold*' (1.245-6).

One solution to the problem of description came to mind. 'As the brain-changes are continuous, so do all these consciousnesses melt into each other', he wrote, 'like dissolving views' (1.247). It was an assertion he made again in his description of the 'time-parts' of which continuous thought was comprised: while different moments in continuous thought 'melt into each other like dissolving views' to create a 'unitary and undivided' perception, 'no two of [these moments] feel the object just alike' (1.279). Not only does James's hypothesis rely on technological metaphor to find its focus on the *in-between*, the relational constitution of consciousness, it relies too on what the stereopticon's ongoing dissolves make visible to the eye: the ungraspable indivisibility of our ongoing thoughts, a merging which must be understood as pure process, as the dynamic shifting of numberless relations, those '[d]umb or anonymous psychic states' towards which words don't seem to work. Indeed, the stereopticon provides James with a figure for the analogue movement so integral to his model of the mind: the flowing stream. Its function within his text may therefore have less to do with the symbolic workings of metaphor – the token exchange of one thing for another – and more to do with the very movement of that exchange or semantic relation: the 'carrying' that metaphor does. Calling on the stereopticon's mechanisms, the *effects* it brings to mind, James applies the stereopticon's dissolve to denote the grammar of consciousness, in all its shades of conjunction, preposition, and plays of syntax.

James's metaphor also reshapes the relationships between mind, machine, and order that previous philosophies of mind had sought to preserve. On one hand, the machine metaphor transforms chaos of consciousness into a productive mechanism, an implement with which we might act rather than an abyss into which we might jump. On the other, it locates chaos within the machine in a way that not only prompts a reappraisal of the rhetorical insistence on technological order, but which invites us to re-read the workings of chaos in the same way that James's treatise invites us to re-read the workings of metaphor. So it is that in Stephen Crane's short story 'Five White Mice', the evocation of the stereopticon's dissolve brings us closer to understanding the stream of thoughts engendered by the modern metropolis not as a kind of madness, but as a heightened sense of one's own consciousness. Crane describes the runaway thoughts of a 'New York Kid' who finds himself in a stand-off with a group of shadowy Mexicans on one of the city's dingy streets. As the danger of the other mingles with the milieu of the city's rat-race, the Kid's visions suddenly become frantic, 'perfectly stereopticon, flashing in

and away from his thought with an inconceivable rapidity, until, after all, they were simply one quick, dismal impression' (Crane 1898: 328). Crane's adjectival turn recalls James's grammatical one, emphasising sheer effect and with it the Kid's immersion in a moment of pure relationality. It is only a moment: the Kid's mind doesn't disintegrate into fear or madness. Instead it teeters on the edges of chaos and disorder to bring the reader a glimpse of modernity in all the rush of connections, alliances, enmities, and struggles that the city brings, magnified, to the mind. Just as it creates that glimpse, the stereopticon contains it: a snatch of consciousness in all the complexity of its relations, briefly illuminated on a New York street before the slide changes, and the scene dissolves.

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