Anti-Humanist Narratives: *Greed* and *Source Code*

When it occurs to a man that nature does not regard him as important, and that she feels she would not maim the universe by disposing of him, he at first wishes to throw bricks at the temple, and he hates deeply the fact that there are no bricks and no temples. -- Stephen Crane, ‘The Open Boat’

If the seventeenth and early eighteenth centuries are the age of clocks, and the later eighteenth and early nineteenth centuries constitute the age of steam engines, the present time is the age of communication and control. -- Norbert Wiener *Cybernetics, or Control and Communication in the Animal and the Machine* 1949: 50

This paper explores specific, rare, anti-humanist narrative possibilities in Hollywood cinema that occur in the early decades of the 20th and 21st centuries, signified by two films, Stroheim's *Greed* and Jones' *Source Code*.[[1]](#endnote-1) We contend that these films, separated by almost a century, mark two moments in which the normative humanism of Hollywood has been penetrated, once by Naturalism, and once by Code. Both share a narrative logic in which human agency is in question, though the former constituted a recognizable school, while the latter is more a condition under which cinema operates, and which becomes thematic material in a body of films. They share however a capacity for a political aesthetics predicated on anti-humanist representation which has not been oft-explored in Hollywood’s narrative and diegetic lineage. The two specific moments marked by the films examined in this paper reveal the intellectual, technological and cultural conditions of possibility for the salience of such representational interventions in Hollywood narrative cinema.

US Naturalism and Cinema

Naturalism emerged alongside and in response to Realism as the second main aesthetic mode of representation in American literature in the latter part of the 19th century. Realism proved to have staying power and remains the default mode still but Naturalism did not, winding down rapidly by the time of the Depression (an historical situation rife with irony). Naturalism when used broadly in the arts refers to a mode of representation that is detailed, detached, and objective. Clearly not synonymous with Realism, in which characters have some semblance of autonomy and agency that can possibly affect their situations, Naturalism assumes that humans have little or no control over events or their lives. Rather, things happen *to* people, who are at the mercy of external and internal forces: mere biological and environmental puppets whose movements are determined by forces beyond their control. Human existence and its pleasures or vagaries are merely byproducts of the larger workings of Nature, for which humans are mostly irrelevant. In this manner Naturalism exemplifies a recuperation of the pre-Socratic and indeed Aristotelian notions surrounding *physis* (nature, force, being) as filtered through the biological and geological sciences of the 19th century, including not only the subsequently triumphant work of Darwin and Lyell, but once influential theories of Lamarck and Lavater on the transmission of acquired characteristics and on physiognomy as destiny. Naturalist works, therefore, stress a variety of biological and socio-economic determinisms, with the latter being byproducts of the former. In fact, Naturalism often asserts that human systems such as politics, society, labour, and human institutions such as corporations, schools and churches, are mere extensions of a human nature entirely integrated into a larger Nature. The ‘nature’ found in Naturalism is the cruel nature of Tennyson (*In Memorium,* Canto 56), ‘red in tooth and claw’, found in the most deterministic, Spencerian readings of Darwinist theory. Darwin himself, in the 5th edition of *On the Origin of Species,* used the phrase he found in Herbert Spencer’s account of evolution, ‘the survival of the fittest', although he intended to note the 'fit'of a species in its environment, rather than sheer strength.

Naturalism, according to George Becker, operates as a ‘pessimistic material determinism’[[2]](#endnote-2) but can be considered pessimistic only if one considers the drive of the organism toward self-destruction pessimistic. In Freud's late writings, *thanatos*, the death drive, is an innate aspect of all biological systems, an organic parallel to the Second Law of Thermodynamics, with its insistence that the very nature of time is determined by the tendency towards entropy. To refuse this biological determination, in the view of Naturalism, is to embrace a nostalgic or illusory humanism. Thus for Frank Norris, the author of Stroheim's source *McTeague*, writingin *The Octopus*: ‘Men were mere nothings. Force only existed. Force that brought men into the world, force that crowded them out of it to make way for future generations.’ The cycle of birth and death, within Norris’ Naturalism, is presented on a grand scale. A kind of geological time for framing and contextualizing biological organisms, as with Darwin following the influence of Lyell, stranded humans on a raft bereft of power, import or agency. Such a temporal perspective – that of geological epochs – is not one that adheres well to Hollywood’s established narrative and genre demands.

Greatly influenced by Naturalism as practiced in Europe and often addressing many of the same issues and institutions as those found in Emile Zola’s novels, US Naturalism had its own peculiar qualities. Naturalistic authors tended to represent characters as the victims of both their instinctual drives and of society. Environment and social background play a larger role in their fates than they do in the melodramatic narratives of Griffith and other early story-tellers of US cinema, for whom moral qualities of pity and courage confront ideal types of cruelty and lust in a thoroughly pedagogic theatre[[3]](#endnote-3). Naturalist novels in the US, such as Frank Norris’ *McTeague*, concentrated on social problems or vices that especially affected the lower classes, that is the majority of the population and importantly the majority of the early cinema audience. In essence, these works examined individuals as case studies metonymic of larger problems generated by society, itself again a continuation of nature by other means. The decentering of the human and the complete lack of efficacy for human agency that one finds in US Naturalist novels extends to the author too, as Norris, Crane and others strove for an anonymity of the author as individual artist and producer of the text, rendering him/her a mere machine recording the events of a world in which the human is no longer the center of his or her own life, much less the universe. With the rapid rise of photography in the second half of the 19th century, and the advances of cinema later, these novelists found visual machines that could metaphorically lead the way for the themes, goals and aesthetics of their prose. Indeed Crane’s imagery of warfare was likened at the time of the publication of *The Red Badge of Courage* to the scientific photographic motion studies produced by Muybridge and Marey. Nature, through science and technology, was increasingly being revealed, unfolded, before the unflinchingly distanced scientific methods aided by machinic witnessing and prosthetic sensory enhancement. The atomistic possiblities found in the photographic motion-studies of Muybridge and Marey not only inspired the Naturalist novelists in the US but find their way into the spatial and micro-temporal fixations of a current cycle of movies premised on the computability of everything, including human lives, that we describe as Code films.

It is worth considering Norris’ novel in some detail when discussing von Stroheim’s film of it because he had intended to film the entire novel: to make cinema a visual reproduction of the chirographic work. The legendary 42 reels for the first cut of the film indicate this novelistic scope, one that sought to replicate in its form and duration the immersive temporal concerns of US naturalism while simultaneously jettisoning the length constraints of most Hollywood narrative feature films. As much as von Stroheim wished to recreate the novel, Norris’ novel similarly wished to recreate elements of cinema and its mimetic capacities, and cinema plays a peripheral though intriguing role in Norris’ *McTeague.* Paul Young argues that a kind of cross-media anxiety is operative in the novel, as the effects of the projecting kinetoscope at the vaudeville show that his protagonists attend proves profoundly disturbing and moving for them, likely in ways that the novel could not.[[4]](#endnote-4) The kinetic machinery of US life, the power and biopower that Naturalist novels sought to reveal, seemed to be best exemplified by the machinery of emergent cinematic technologies. The compulsion to remove humans as the driving force of cinematic narrative makes perfect sense from a technological deterministic position and fits well with US Naturalism’s understanding that all human endeavor, institutions and technologies as the epiphenomena of nature. To put it broadly, Norris aspired to the analog indexicality and objectivity naively ascribed to visual reproductive technologies while von Stroheim hoped for the scale and non-human agency operative in Naturalist novels. But such a world-view did not fit well with the strong character-driven cinematic narrative that Hollywood had mechanically attached itself to in the first few decades of the industry’s existence – though it was still very much up for grabs when Norris expresses his uneasy admiration for the cinematic camera’s potential to perform the novel’s mission as he saw it.

Beginning with Stephen Crane, the physical settings of US Naturalist works became protagonists and prime determinants of action. The landscape, which often served as discursive and historical destiny for the US as a nation, as well as a resource for the rapacious economy, began to take on a primacy in the human interactions enacted within it, despite the land’s and nature’s disregard for humanity. The urban settings of many US Naturalist works indicate the simultaneous urbanization of the landscape and the inescapable insertion of Nature into the City. In Norris’ *McTeague* the urban setting of San Francisco has especial resonance and power. The city emerged largely due to the gold rush of 1849 that essentially destroyed the much-mythologized ‘frontier’ while binding the continent’s coasts in Manifest Destiny. The city itself had been born out of gold lust, a condition reified in the name given to the facing land masses that created the passageway to the city’s bay: the Golden Gate. Norris sets much of the action here but also in the mines from whence both the city and McTeague emerged. Both novel and film end in the barren terrain of Death Valley, indicative of the inhumanity of nature and of the destiny that drives humans. The natural landscape and the built environment blur in Naturalist artworks, the division being one of materials rather than intent or human agency. The interior of the human in Naturalism constitutes a microcosm of the external natural world. The only real difference is scale.

As primary engines in the 19th century’s industrial/social revolution, the extractive arts altered economies, nations, social class structures and cosmologies, with geology and biology providing larger challenges and supplements to doxology and dogma. With US Naturalism, the primary extractive art is mining; in the Code age, it is data. Though we wish to note synchronic parallels between the two cultural-historical-philosophical moments exemplified by our metonymic films – *Greed* and *Source Code –* it is important to note that there is a significant shift in relation to extraction in the two periods, with the former leading to and influencing the latter. In the moment of *Greed*, the goal of extraction is primarily material, as eerily presented in the Trina’s miserly erotic relishing of her gold coins flowing through her spidery hands and along her emaciated arms. The *Source Code* moment, on the other hand, reveals how the Code age’s interest in extraction (of energy sources like oil, water and uranium) occurs at both micro and macro scales with an immaterial concern driving the material demands.[[5]](#endnote-5) Power and greed still prevail but the desire is for accruing information from online behavior, from DNA or from databases, and only obliquely for the material and energy resources that make this extraction possible[[6]](#endnote-6). Big Data perfectly exemplifies this shift, though the shift is prefigured in the geological time of US Naturalism.

In Norris’s novel, the ore ruthlessly ripped from the earth mimics the ore of the humans so ruthlessly ripping. Thus in *Greed* McTeague grows up in a mining town, under the abusive alcoholic tutelage and exemplar of his father as both foreman (the child working as ore-boy for his dad) and parent. He finds escape (or so he believes) from the animal brutality and degradation of the mines via another extractive art, this one corporeal and bordering on quackery: dentistry. We are shown in the film how, without formal training and often without tools other than his own immense strength and ‘vise’-like hands strengthened from his youth in the mines, McTeague converts brute power to legitimate bourgeois endeavor in the city as he attempts to flee his birth and his biologically-encoded fate. In proper Naturalistic fashion, McTeague falls under the deluded sway of the possibility of cheating nature, and is therefore destined to fail miserably and painfully. The same brute strength that made McTeague a somewhat successful dentist becomes, under the gold-fevered lust of his wife Trina, the force that leads directly to her death at his own vise-like hands. No gain goes undone in the Naturalist teleology of death and destruction. Prior to his turn as murderer who retreats again to the anonymous exploitative labor of mining, McTeague sets up shop in the American city synonymous with the mania of mining and extraction, San Francisco. The sublime physical beauty of the Bay Area becomes in von Stroheim’s film a heaving sore of garbage heaps, industrial factories, and evacuated spaces of mud and flotsam. In McTeague’s rapid decline to his ‘true nature’, Von Stroheim’s and Norris’ settings heavily underscore the ways in which the land (or nature) extracts its own pounds of flesh from those who wish to traverse and extract from it.

The paradox and schizophrenia of extraction operate in *McTeague* and *Greed* insofar as they reflect the 19th century unleashing of Plutonic and plutocratic powers through mining, resulting in technological, social and political upheaval. But the tradition of Western discourse regarding truth and knowledge as codified in hermeneutic practice and interpretational strategies has long offered a kind of echo to mining in the form of the frightening revelation of the text. We find this ambivalent power operative in the root ‘–ply’, Latin for ‘fold’, which exists in a host of terms and concepts including imply, explicate, apply, comply, and complicate. When in Naturalism we confront truth as act of unveiling, we are placed in a spot where the scroll and its knowledge is en-folded (or encoded) and we must unfold the book to its very core to mine its meaning. This is as true of the book of Nature as it is of the book of God (for any of the monotheistic religions) or indeed any book. As we will see, data mining does not operate at this semantic level, yet keeps the same metaphoric structure.

Surface readings, we learn early on in the hermeneutic processes of literary and religious studies, prove inferior to deeper readings that reveal deeper meanings. With reading, as with photography and cinema, the truths we encounter directly through the senses are stuck at the surface.The biological sense of vision is confined to surfaces. Any thing that can be seen is *de facto* a surface. The act of folding implies a fault-line, hiding one surface under another. Hence there is a suspicion of the surface; there is something more there than meets the eye. To render explicit (ex-ply/un-folded) what was implicit (im-ply/in-folded) in a text is a matter of making hidden surfaces visible or accessible. A key procedure then, for our own readings of these films, is somewhat akin to the paradoxical dimensions of the extractive arts suggested in the root –ply, for each fold essentially demands its unfolding or its piercing if we are to know its meaning or essence. The surface simultaneously repels and attracts, indicates more than meets the eye and prevents the eye (of understanding) from seeing what resides within.

For Naturalism, geology was literally the truth underlying the Earth's surface. Yet in *Greed* piercing the surface and extracting a contained and stable essence is a violation of that surface and what it contains: whether meaning or gold. The extractive arts of mining, oil drilling, data mining or hermeneutics result in a kind of violence, and this violence of extraction permeates US Naturalist fiction and film. Similarly it lurks below the surface of Code films, whose entire technological system of computers, network infrastructure and displays relies upon fossil fuel extraction and mineral extraction. The extractive arts remain firmly in play in the current moment of ‘clean’ post-industrial technologies, and the extraction of meaning, truth, energy, power, and wealth remains a violent, bloody business from Naturalism to information systems, from DNA to programming.[[7]](#endnote-7)

**Code and Cinema**

As the term suggests, what lurks below the surface of US Naturalism is 'nature', biology as destiny, the nature of a person or a society that may be hidden in the folds of culture but not denied. In *Greed* the privileged medium of this terrible revelation is the mouth: McTeague biting Trina's finger (as she reminds him at a critical moment in the film when we might have learned to empathise with him); the mining for gold teeth on the open mouths of his patients; the incessant chewing of all the novel’s characters, the compulsive eating of the wedding breakfast. Even though, as Beniger[[8]](#endnote-8) is at pains to demonstrate, 19th century US had embarked on an information revolution, in many respects film, despite its sampling of alternative aesthetics[[9]](#endnote-9), wedded itself to narrative within a handful of years of its invention, a move that seems in retrospect and pace Kracauer[[10]](#endnote-10) to explain the immense success of cinema as a reaction *against* the increasing automation of life and labour. Where the electric revolution in which cinema participated promised an inhuman hygiene far from the exposure of the throat and gullet, Naturalism, as so many critics of *Greed* at the time of its release and subsequently described it, is fixated on 'depravity'[[11]](#endnote-11) anchored in the animality of a Spencerian vision of evolution. In *Source Code*, the anti-human metaphor switches to computing, and the equivalent of Stroheim's depravity no longer the warm, wet interior of the body but the abject body itself, figured as the mere meat of Colter's actual body in its survival pod. The repression of extraction in the current “clean technologies” repeats the drive for wholesale stripping of the frontier and its minerals in the 19th century: in the same way, the body which Code dreams of converting into eternal software remains, especially via biotech, inextricably wedded to wetware, even when the computing term Code extends to genetics and codes of behavior.. In both periods, Plutonic drives operate within a willed collective suppression of the conditions of their possibility (metals in the manufacturing era; oil in the electronic), but with US Naturalist films and novels, and to some extent Code films, providing for the return of the repressed and elevation of the elided.

US Naturalism is a revolt against automation, an extreme form of the realist narrative, at the same time as it revolts against the artifice of the humane that Stroheim had learned as very junior apprentice to Griffith: the saccharine whitewash of moral sentiment that the Victorians painted over the actuality of factories, slums and mines. That these conditions were revealed in the light of the prying camera of social reformers such as Jacob Riis, although betraying a naive faith in the objectivity of the unflinching mechanical eye, reinforced the cross-medial relations between literature, visual technology and empirical science fully outfitted with optical prosthetics. Von Stroheim and Norris are of the same anti-humanist mind, not necessarily because they were anti-human but primarily because of the social and economic relations and travesties that transpired under the pious gloss of humanist sentimentality, as articulated by Griffith and the melodramatic trajectory solidifying in Hollywood narrative in the first few decades of the 20th century. If the general literary trend during the 1910s and 1920s in the US was away from sentimentality and the sentimental, as Lea Jacobs has argued[[12]](#endnote-12), then the drift in Hollywood narrative cinema was clearly in the other direction as melodrama continued to provide a shorthand of grand emotional gestures, with Griffith and Chaplin being rather complicated examples of the status quo more fully realized in the 1920s work of Maurice Tourneur or Fred Niblo. US Naturalism, though, clearly offered unsentimental narrative options – an altogether different set of conditions of knowledge as a political aesthetic – that Hollywood cinema did not fully pursue. In our own moment, along with the Code films we discuss here, there is an example of revisiting US Naturalism to be found in Paul Thomas Anderson’s hauntingly bleak adaptation of Upton Sinclair’s *Oil* (1927) entitled *There Will be Blood* (2007). Elements of this political aesthetic remain viable in the present, but only barely so.

The Naturalist revolt against automation might be expected to be matched by a revolt against computerization in Code films, but there is a significant difference. Where San Francisco stars in *Greed* as the city of the Gold Rush, the Chicago of *Source Code* is the home of neo-liberal economics (in the work of Coase, Hayek and Friedman among others). Equally significantly, it is the site of one of the oldest and still one of the most important global stock exchanges, a pioneer of electronic trade matching and algorithmic (automated or 'algo') trading, through which finance capital flows are largely handed over to computers. Like the rapid transit system and the lab where Colter's body is held, the city appears at once as familiar landmarks (the Sears Tower, Anish Kapoor's Cloud Gate sculpture) and as entirely constructed of data, its commuting population serving purely as encoded functionaries of this vast and superhuman digital economy. The diegetic world to which Colter travels is both the physical mid-western city and a product of the conversion of population and environment into data prior to its extraction into the information economy of contemporary algo trading.

Similarly, the unsentimental procedures of *Greed* should be firmly separated from the virtual sentimentality of *Source Code*. Quite apart from the anomaly of inhabiting another man's body to seduce a woman, there are two strange contradictions in the virtual scenario. The last is the call received at Beleaguered Castle in the present from Colter, now inhabiting the purely virtual world he has enabled: a paradox more or less required by the plot. The other is more perplexing because it arises from a subplot with little impact on either the obvious thematic content or the narration of the film. This occurs when Colter, aboard the train, phones his father, pretending to be another soldier, to reconcile himself with his parent. Both calls connect the digital Colter – instrumentally with his handlers, and affectively with his presumably real father – via an electronic connection that allows him to be someone other than himself. The lack of physical co-presence, the mediation through not only a borrowed body but a borrowed voice, mark this significant moment of emotional contact as bogus – a falsehood that echoes in one of the final shots when, reflected in Kapoor's burnished sculpture, we briefly recognise not Colter's face but Sean's.

After this second turn of the century, the determinant anti-humanist views are no longer the powers of evolution and of natural and human environments shaping the lives of people but code. The convergence of several discourses around the term code from structural linguistics, computer science and molecular biology was already observed in the 1970s. For Jean Baudrillard, the word Code stood for a global, total and self-operating system, embracing media, economics and politics as well as language, behavior and biology.[[13]](#endnote-13) Code differs from the 'human nature', the *bête humaine* revealed by Naturalism, though it clearly has links to the re-emergence of biology in its billion-dollar extractive and synthetic industries resultant from DNA-driven biotech. It does not unfold as narrative the enfolded heart of darkness. Instead it decrypts, an effort that combines deciphering with an unholy resurrection of the dead. For Naturalism, the foundational power of Nature renders human agency null and void. In the Code era, Nature is reduced to data along with human behavior, but with the underlying faith that understanding how to re-encode this data empowers humanity to manipulate the world, even if in so doing individual lives might become inextricably enmeshed in the larger forces of coding.

Perhaps staged as a dark and savage parody of Griffith’s highly-skilled cross-cutting and rhythmic editing found in his signature ‘last-minute rescue’ sequences, von Stroheim’s Death Valley sequence provides unremitting representation of Naturalists' political aesthetics. [[14]](#endnote-14) Relying on a largely static camera that frames the two protagonists in the bleak terrain of the aptly named Death Valley desert, the shots in the scene emphasize framing and *mise-en-scene* over editing, and by holding human and non-human actors within the same chronotope of engagement better articulating Naturalist values. There is no possible exit for the two characters chained to each other, fighting to the death for a piece of gold they cannot possibly live to spend or hoard. No realization of their immediate existential peril enters their consciousness, only the desire to wrest the valued ore from the other. In a scene that would make B.F. Skinner seem an advocate for free will by comparison, the metal that they cannot eat or drink or use to unchain themselves or flee their mortal circumstances nonetheless drives their immediate actions. Their internal natures prove as ruthlessly destructive and deadly as their external environment. There is no rescue here, last-minute or otherwise, only the visceral self-annihilation of greed.

Death is not terminal in *Source Code*. The repeated explosions only hurl Colter back to his cell, which, we will eventually have revealed to us, is itself an illusion. If in *Greed*, the final fight evidences avarice as a kind of death instinct, in *Source Code* nothing is presented as final except the endless repetition, itself a mark of the death instinct in Freud. To escape that, Colter has to understand the world as puzzle, rather than Stroheim's vision of the world as Force. One shot in *Source Code* especially evokes this contrast with *Greed*: each time Colter goes back in time, the sequence opens with a shot of the train passing a lake over which a duck flies with an audible slapping of wings and quack. Who hears or sees this? Certainly no-one on the train; and from what we can infer from dialogue, no-one in the laboratory – only the camera, machines seeing other machines. Like the cut from the upper room to the objective exterior shot of the funeral in *Greed*, a moment of pure cinematic seeing, the duck is pure effect of a world comprised exclusively of code – the genetic code of the duck, the ferocious mathematics of the lake environment, the biopolitical surveillance of the city on the horizon, and the vectors tracing the trajectory of the duck's flight as it momentarily intersects with each iteration of the train and its narrative variants. This shot, like the sudden move into the street in *Greed*, emphasizes that inhuman processes continue with or without care or attention, whether Force of Nature or the post-Newtonian ticking of a fundamentally numerical, algorithmic universe.

In the speculative writings of early systems engineers like Moravec, the implications of Code were utopian, as to a degree evolution had been for Spencer and Bergson.[[15]](#endnote-15) We would learn to replace the doomed apparatus of the human body as a home for the mind by uploading consciousness into computers – the Cartesian grid on a grand scale that might free the mind from its all-too mortal coil in the finely coded electrons of cyberspace. Big Science would decrypt the mortal brain and decant it into immortal silicon: an extension of Bazin’s photographic ontology of immortalization from the living memory of the dead to the living dead themselves.[[16]](#endnote-16) The utopian dimension that distinguishes Code from Naturalism risks revealing the truth about technology that Marx had unearthed in the 'Fragment on Machines': that machines are 'dead labour', common skills alienated from their human sources and reconstituted as black boxes whose rhythms determined the discipline of manufacture.[[17]](#endnote-17) In this process, both workers and the ancestral skills of their forebears are enslaved to capital. The real machinic immortality underpinning Moravec's idyll is that of the numberless dead still enslaved to exploitation in the form of machinic processes extracted from their once social techniques.

This is the position of the inert protagonist Colter Stevens in *Source Code*: a human whose embodied skills are in the process of becoming code, and whose humanness is being extracted by code. Where McTeague finds himself in the process of becoming animal, or realizing humans have only ever been animal, Stevens finds himself in the process of becoming data. The hermeneutics of 'imply', the logistics of 'supply', and perhaps most of all the incipient informationalism of complex/complicate becomes here the achieved biopolitics of 'comply'. The narrative of *Source Code* concerns a man who adapts to his posthuman life as Code. His liberation from both the illusory cell of his confinement and the all-too-real prison of his broken body is achieved through his compliance with the protocols of his masters, protocols so subtle that even mastery is excluded from the mystery of their operation in the final act. It is as if Colter submits to becoming the folded surface, the purely informational, depthless form, of his own life.

That which has been written, as DNA code, as computer code, as code of practice, can be rewritten – or so the utopian version of this narrative runs. As with the terrible pun that would drive eugenics and racial cleansing through the 20th century, 'survival of the fittest', this utopianism is based on a survival of the smartest. In Foucault's late lectures,[[18]](#endnote-18) the same figure of the 'smart'[[19]](#endnote-19) appears under the guise of biopolitics, the reduction of desiring bodies to managed requirements, but even more so their agreement to this rewriting of liberation in the form of self-discipline and the care of the self. Any sense of liberatory potential of genetic or computer code is swamped by the homeostatic cybernetics of both natural and digital systems. Self-correcting and self-operating according to a teleology unknown to humans and impervious to human agency, neither code is concerned with the human except as medium for the delivery of information. Dr Rutledge, the scientist who has devised the time-travel machine in *Source Code*, with his lack of empathy and his readiness to sacrifice Colter to the needs of the system, provides a human face for this inhuman system. The Baudrillardian master Code presents liberation itself as a product of the Code, encouraging enthusiastic compliance by humans in the system that imprisons them. Like the human energy cells of *The Matrix,* and like McTeague believing he can cheat his inherited biological destiny through dentistry, Colter is allowed the delusion of choice, agency and rewarded desires, but without the false consciousness of Marxism or even the 'Enlightened false consciousness' of Sloterdijk’s (1988) cynical reason. Thus the evolution and improvement of the species equates to the perfection of Code, teleological ideals that coopt desires for escape from corporeal limitations to the operation of the Code.

While both films share a tragic sense of the eternal return, only Stroheim faces up to the ghastly consequence. Like other repetitive film scenarios (*Groundhog Day* [1993]*, Run Lola Run*, [1998]) *Source Code* introduces us to the vertiginous possibility of an eternity of recurrence. Hollywood's favourite trope of undying love – also deployed in *Déjà Vu* (2006)*, Adjustment Bureau* (2011) and *Inception* (2010) – is the only apotropaic: take away that talisman and we confront a hell worthy of Flann O'Brien.[[20]](#endnote-20) Romantic love only enters *Greed* as an operation of nature’s unreadable teleology, mere human lust forcing one generation of humans off the earth to make way for another (as Norris writes in *The Octopus)*. Love in *Greed* is no relief from the engine of time, merely that which provides a human scale for temporality. Von Stroheim, via Norris, not only faces the consequences of temporality but through a grim irony reveals narrative on the human scale as a microcosm of blind natural process, as opposed to Hollywood's normal focus on individual will. The plot of the narrative ends necessarily with the plot in the cemetery.

Love still functions, however, in *Source Code*. In an earlier era, Hollywood had introduced the femme fatale in order to tame her, by love or death. Today it introduces the hell of an eternity spent as Code, only to tame it with the possibility of a terminal love, a terminal sacrifice, a terminal resurrection. As befits a cultural apparatus uniquely tuned to the cultural pulse of its audiences, 'the genius of the system'[[21]](#endnote-21) – to continue the analytic power of systems thinking operative in the 20th century --still harmonises narration with the individualist, not to say solipsistic formation of its audience (the code name for the system in which Colter operates, Beleagured Castle, derives from a game of solitaire). In the utopian manner that belongs so closely to true entertainment,[[22]](#endnote-22) the system finds in narrative a means to salvation, albeit a salvation which is exclusively individual, given the individualism of the system's preferred narrative form. Where Moravec, mistaking mind for brain, surmised an upload future where individuality would be stored, Hollywood already promises an escape from storage, but only on the principle of individual discoveries of love (of the kind manufactured by Hollywood causal narrative), individual discoveries of self-sacrifice, the latter at last always already an extreme form of the care of the self demanded by the new biopolitics.

**Time and Technique**

'The city that Frank Norris wrote of in *McTeague* had been largely destroyed by the earthquake and fire of 1906. Polk Street, the meanness of which Norris had minutely reported, was now a prosperous and respectable avenue'.[[23]](#endnote-23) That large-scale forces of Nature had obliterated Norris’ urban setting between the publication of the book and production of von Stroheim’s film simply serves to prove some of the political aesthetics marshaled by both. In its place, the Goldwyn company took out a year's lease on a house at the corner of Hayes and Laguna in Oakland, across the Bay, in a street which retained characteristics of the late 19th century San Francisco of the novel and Norris' youth. Captain Richard Day, Stroheim's long-time set designer, described paying the inhabitants of a 'gloomy, filthy, musty' tenement for the use of their house for the Sieppe's residence. Shooting on location and restricted by the ceiling, Stroheim (as Salt observes)[[24]](#endnote-24) could use no back or fill lights, and was constrained to use front lighting to get enough light into the room to balance the brilliant sunlight outside, so as to include the funeral procession passing in the street below during the wedding breakfast. Salt deduces a 40mm lens for the long shots, though it is likely the lens would have been changed for the close-ups and inserts. Thus location dressing, lighting and lensing contribute to the construction of a Naturalist scenario, permitting it to carry both the realist ethos praised by Bazin and the freight of allegory necessitated by the Naturalist emphasis on invisible forces.

The insert that takes us into the street (closed by order of the city fathers) for the exterior shot of the funeral is especially puzzling. The showprint would have made the exterior action quite obvious, and accounts of the music played on set suggest that the cacophony of wedding and funeral music would have been duplicated in roadshows to draw attention to the juxtaposition. Given the miserable history of the cut from von Stroheim's 42 reels to Ingrams' 18 and the studio's final ten, we cannot know quite what the scene might have looked like. In the remaining prints, the presence of an unmotivated view of the cortège, unrelated to the sightlines of any of the characters, extracts the exterior shot from any diegetic point of view. The extravagance of the high-angle ('crane') shots which frame the cutaway likewise push the irony from mere coincidence observable by the characters to the PoV of an omniscient objectivity that the cutting promotes to a position of detached aesthetic appreciation of an eternal verity, the universal coincidence of marriage and death and all that sets in motion as described by Naturalist novelists. This moment and audience/camera perspective offers dimensions of cinematic capacity that Norris envied.

Stroheim's technology lends itself to such eternal return. A dialectic of cyclical repetitions and linear movement forward motivates the combination of circularity and linearity proper to the cine camera and projector and shapes its particular temporality and record of space. The shutter opens on a scene; the light registers on the frame; the shutter falls. The scene is recorded in a single exposure. Chemically amplified, it holds the scene as a single entity, structured by lens and light, an object comprising other objects and their relations, a plenum. Stroheim's blocking of the shot works with that plenum to inhabit the entire screen with details not one of which, from ivory keys to teeth, is other than fated.

The equivalent bravura shot in *Source Code* is the bullet-time move through the carriage at the moment of apotheosis. Where Stroheim takes us from wedding to funeral as a merely spatial congruence of chapters in an ever-recurrent cycle, Jones' uses the 550fps Phantom HD camera to spatialise an instant of fulfilled living, to hold and confirm apotheosis as the *terminus ad quem* of the film and of the strangely curtailed life of Colter. The critical difference lies not exclusively in the frame rates the Phantom is capable of but in the architecture of the CMOS chip it uses to gather light. In many respects this is the same technology as Stroheim's Mitchell: traditional cinematography oxides molecules of silver halide, discarding ions in the process. In CMOS chip cameras, the ions (electrons) are gathered to convert into charge. Where the latent image in wet film is chemically amplified, latency in digital cinematography marks the time required to remove the charge from the chip and convert it to voltage, the first step in digitization. That period of (digital) latency is governed by a new aspect of imaging, the clock function. The whole of the chip is exposed simultaneously to the scene, as in traditional cinematography, but the charge must be drained from the chip both in channels (governed electrostatically by the doped ridges and gutters of the transport layer) and in order, an order timed at Herzian frequencies by the chip's inbuilt clock.

Scanning is not only a feature of display but of the storage of digital images from the moment after exposure: considerably less than one five-hundred-and-fiftieth of a second, the duration when the shutter is closed and the chip is readied for the next frame. The image gathered by the CMOS chip is fundamentally ontologically unstable. It is this instability that is in question throughout the narrative of *Source Code*: a failure to be, a failure of presence. The respective ontologies of the two technologies are played out in the shape of the stories that each exposes, neither of them humanist, though each alien to the other.

In the *Greed* sequence, grading would have been an issue in matching interiors – especially reverse angles away from the window – to the exterior shot, as well as the high-contrast shots of the priest against the window. Digital grading is a simpler process from the point of view of the editor but involves some specific problems of data management. Where the succession of film frames is held together as temporal process from capture through developing, drum printing and the flat-bed editor, digital images are, as we have seen, changed between capture and digitization into pixel arrays, effectively temporalizing the internal architecture of the frame itself. Digital film has to be handled by a variety of codecs (compression-decompression algorithms) used to pack the frame for transmission to the camera's hard-drive, to transmit via cable to an edit suite, to conform the signal to the operating system, to conform it again to the editing software, to export the cut and graded version to optical or magnetic master, to transmit and to display. Each compression-decompression cycle loses data. Even so-called 'lossless' codecs like RAW parse frames as pixels and package pixels in various scales of blocks, often determined by tools like face-recognition to maximize data in what are automatically coded as key areas of the frame while economizing on areas where little change occurs across a sequence. The sequence itself is defined automatically by key-frames. To minimize transport of redundant data, areas which share a basic tone are grouped together in blocks or slices, while camera movement and action within the frame are accounted for by comparing start and end keyframes and using vector prediction to map the probable movement of the action across the field of vision.

Thus the digital film operates in four temporalities: the frame which it has in common with analog film; the pixel array as clock-function; the blocking which reassembles the temporal pixels as spatial fields; and the vector prediction function which converts blocks back into temporal mode, but only by mapping the conclusion of any movement against its origin, thus excluding the unexpected, and effectively denying the emergence of any future not already determined by its dataset. In some respects the automation of these functions merely extends the Naturalists’ attempt to construct a verisimilitude capable of carrying the semantic weight of the invisible, to erase the author from the work and to underline the prescripted destiny of their characters' behaviours. The major technical difference lies in the new micro-temporalities of the digital, in which Colter finds himself suspended (and into which disappears at some point in the narrative the personality of Sean, whose body Colter assumes). We should then read the bullet-time freeze as a Capraesque moment of fulfillment, but also as the crux of a contradictory concatenation of timelines, imaged in the narrative, but proper to the technological substrate that carries them. Just as von Stroheim outdoes Norris' cinematic imagination by the contradictory linear circularity of the cinematic apparatus, the Phantom HD pass through the carriage reveals as absolute data the geo-locations and attitudes of the passengers, welded into a community of compliance by becoming the audience for a hetero-normative, not to say masochistic, joke told for a bet by the grumpy professional comedian.

The mechanism of digital capture is foregrounded in one of *Source Code*'s recurrent motifs,. Every time Colter returns from the digital Chicago to his cell, there is an emulation of an electronic glitch on both audio and video tracks. Like the Adobe Photoshop lens flare filter, designed to imitate a flaw in photographic apparatus in order to persuade audiences that a real camera has been involved in fantasy sequences (notoriously over-used in J.J. Abrams' *Star Trek* [2009]), the glitch gives fictional witness to a flaw in the digital apparatus in order to persuade us of its efficacy. Glitches mark transitions between the imaged and the vehicle of imaging. There is a parallel here with the reprise of chronophotography, especially Marey's animal studies and motion-capture suits, in digital cinematography. No matter how fast the shutter and how sensitive the chip or filmstrip, there is always the *entre-image*. In Colter's case, that nanosecond gap is the escape hatch first marked in the film as the glitches interrupting his control. In Flann O'Brien's account of cinema in *The Third Policeman*, reality is made up of a series of discrete, still moments -- Zeno's arrow parsed in frozen flight. Colter's paradise is Flann O'Brien's hell -- and both are cinema. The difference between *Source Code* and *Greed* is that von Stroheim's characters know they are condemned while those in Code films still believe the promise of liberatory agency and control afforded by code.

Realism rests on the presumption that representation proves actuality: what can be seen must exist. To the extent that the kind of seeing it presumes is human, realism is a humanism. Naturalism presents the reverse ontology of realism: what fails to be represented fails to be actualized, or at least actualized in visible ways. This is even more true of Code: the code of search engines, for example, guides us to what we already know we want. It suppresses the alternatives that we do not know we want, obfuscates their entry into representation, keeps them at the level of unenacted virtuality. Code fails to depict what it – and we – do not know we want. To the extent that it is unconscious, desire resists interpretation: it is this unconsciousness, this secrecy of desire that disappears in Code's demand to reveal everything – everything of value to the Code. Benjamin's optical unconscious was revealed in slow motion.[[25]](#endnote-25) *Greed*'s inhuman unconsciousness, the unknowable teleology of the world, is uncovered in depth of field and deep focus. The digital unconscious appears only in what fails to exist, the lacunae of search results, what is excluded in the bullet-time pass over the frozen surfaces of the carriage interior. Jones is sentimental, in the melodramatic mode of Griffith, when he rescues Colter from his numerical limbo, the place of a failure to exist marked as existence as pure appearance – in the coded memories of Beleaguered Castle. Stroheim is harder, condemning McTeague to death and absurdity, the absurdity of dying for something he knows nothing of. But for that reason it is easier to feel the narrator's sympathy for McTeague than for Colter. McTeague is prisoner of the implied and supplied, enfolded in a surface he cannot penetrate in spite of the extractive labor that has formed his entire life. Colter is liberated by his compliance, his acceptance of life as pure text, as folded surface. For McTeague, life is to be enfolded, for Colter to be the folded surface. We have passed from an industrial era, the reduction of life to brute force, into an informational era, the reduction of life to brute statistic: the probabilistic unfolding of an already-written code. On a more positive note: both films concern themselves with the great modernist agenda of rendering the invisible visible. In both films, though we can trace a history of anti-humanism as social formation and poetics of immense political potential; we also can trace the technical mediation of that anti-humanism as a mode of critique. We have to know we are trapped, and by which mechanisms, before we can address the illusion of freedom that haunts the realist ethos of both early melodramatic and post-classical Hollywood narrative.

1. As a brief proleptic link between the two films can be found in the year1924, a year that saw *Greed* released and the change of name of the Computing Tabulating Recording Company changed to International Business Machines (IBM). 1924 is also, coincidentally, the year of Lenin’s death and MGM’s founding, just to draw together a few other strands of our paper. [↑](#endnote-ref-1)
2. George J Becker ‘Modern Realism as a Literary Movement’ in *Documents of Modern Literary Realism,* ed. George J Becker (Princeton: Princeton University Press, 1963) 35 [↑](#endnote-ref-2)
3. See for example Altman, Rick (1992), 'Dickens, Griffith and Film Theory Today' in Jane Gaines (ed) (1992), *Classical Hollywood Narrative: The Paradigm Wars* (Durham, NC.: Duke University Press) 9-47; Pearson, Roberta E (1992). *Eloquent Gestures: The Transformation of Performance Style in the Griffith Biograph Films.* (Berkeley: University of California Press); Gunning, Tom (1991). *DW Griffith and the Origins of American Narrative Films: The Early Years at Biograph.* Urbana: Illinois University Press. [↑](#endnote-ref-3)
4. Paul Young, ‘Frank Norris’s Kinetoscopic Naturalism and the Future of the Novel, 1899.’ *Modernism/modernity* 14:4 (2007) 645-668 [↑](#endnote-ref-4)
5. For some extended engagements that link the geological with the digital see Sean Cubitt’s *EcoMedia* (Amsterdam and NY: Rodopi)*,* Jussi Parikka’s *The Geology of Media* (Minneapolis and London: University of Minnesota Press, 2015)*,* and *Ecomedia (Key Issues),* edited by Stephen Rust, Salma Monani and Sean Cubitt (London and NY: Routledge, 2015) [↑](#endnote-ref-5)
6. It seems extremely likely that the lost reels of *Greed* ironically were recycled to extract the silver in them (Stroheim certainly believed so). Equally ironically, there is almost nothing to recycle from the data storage of *Source Code*. [↑](#endnote-ref-6)
7. The number of coups, colonial and post-colonial struggles, and wars waged simply for access to petroleum extraction is far too numerous to list, much less the larger brutal history of ecological exploitation. [↑](#endnote-ref-7)
8. James R Beniger, *The Control Revolution: Technological and Economic Origins of the Information Society.* (Cambridge MA: Harvard University Press, 1986). [↑](#endnote-ref-8)
9. See for example Gunning, Tom (1990), 'The Cinema of Attractions: Early Cinema, Its Spectator and the Avant-Garde' in Thomas Elsaesser (ed). *Early Cinema: Space, Frame, Narrative.* London: BFI. 56-62 and Gaudreault, André (1987). 'Theatricality, Narrativity and “Trickality”: Reevaluating the Cinema of Georges Méliès. *Journal of Popular Film and Television* 15 (3) Fall. 110-119. [↑](#endnote-ref-9)
10. Siegfried Kracauer, *The Mass Ornament: Weimar Essays*, trans. Thomas Y Levin (Cambridge MA: Harvard University Press, 1995) [↑](#endnote-ref-10)
11. This kind of depravity returns in the first few decades of the Information Age when Beckett’s Krapp poses the question “What is a year?”, answering that it is the endless loop between “the sour cud and the iron stool.” [↑](#endnote-ref-11)
12. Lea Jacobs, *The Decline of Sentiment: American Film in the 1920s.* (Berkeley and London: University of California Press, 2008) pp.4-8 [↑](#endnote-ref-12)
13. Jean Baudrillard, *The Mirror of Production*, trans. Mark Poster (St Louis, Mo.: Telos Press, 1975) [↑](#endnote-ref-13)
14. For a reading of this ending in relation to film parodies of other films, see Ryan Bishop *Comedy and Cultural Critique in American Film* (Edinburgh: Edinburgh University Press, 2013) p. 70 [↑](#endnote-ref-14)
15. Hans Moravec, *Mind Children: The Future of Robot and Human Intelligences*, (Cambridge, MA: Harvard University Press, 1988) [↑](#endnote-ref-15)
16. André Bazin, 'Ontology of the Photographic Image' in *What is Cinema?*, Volume 1, trans. Hugh Gray, (Berkeley: University of California Press, 1967) pp.9-16. [↑](#endnote-ref-16)
17. Karl Marx, *Grundrisse*, trans Martin Nicolaus, (London: Penguin/New Left Books, 1973) pp. 690-711 [↑](#endnote-ref-17)
18. Michel Foucault, *Security, Population, Territory: Lectures at the Collège de France 1977-1978*, ed Michel Senellart, trans Graham Burchell. (Basingstoke: Palgrave Macmillan, 2007) [↑](#endnote-ref-18)
19. Andrew Ross, 'The New Smartness', *Science as Culture* 4:1(1993) pp.94-109 [↑](#endnote-ref-19)
20. Flann O'Brien, *The Third Policeman*, (London: Hart-Davis MacGibbon, 1967) [↑](#endnote-ref-20)
21. Thomas Schatz, *The Genius of the System: Hollywood Filmmaking in the Studio Era*, (New York: Pantheon,1988) [↑](#endnote-ref-21)
22. Richard Dyer, 'Entertainment and Utopia' in *Only Entertainment.* (London: Routledge, 1992) pp.19-35 [↑](#endnote-ref-22)
23. Thomas Quinn Curtiss, *Von Stroheim*, (London: Angus and Robertson,1971) p.163. Richard Koszarski, *The Man You Love to Hate: Erich von Stroheim and Hollywood*, (Oxford: Oxford University Press,1983) [↑](#endnote-ref-23)
24. Barry Salt, *Film Style and Technology: History and Analysis*, (London: Starword,1983) [↑](#endnote-ref-24)
25. Walter Benjamin, 'The Work of Art in the Age of its Technological Reproducibility: Third Version' in *Selected Writings*, vol 4, 1938-1940, ed Howard Eiland and Michael W Jennings, (Cambridge MA: Bellknap Press/Harvard University Press, 2003, 251-283) pp.265-6 [↑](#endnote-ref-25)