Transnational Science Fiction at the End of the World: Consensus, Conflict, and the Politics of Climate Change

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by Neil Archer

Abstract: This article considers the significance of transnational production, aesthetic, and narrative strategies in recent forms of "apocalyptic" science fiction cinema. As the article explores, a more transnational mode of science fiction offers the opportunity for popular genre cinema to engage with pressing environmental questions, the contexts of climate politics, and particularly the historical and present role of science fiction in confronting, or sometimes avoiding, these issues.

As I explore in this article, popular science fiction cinema has been characterized by a recent environmental turn but also by a critical move away from consensus and unilateralism in its politics. Although the globalized tendencies of contemporary film production have encouraged or compelled new forms of international cooperation and collectives, both on- and off-screen, these have not always responded to or reflected the contexts of global policy and action.[1] The difficulty of achieving consensus and collective response has been especially apparent in the cases of the environment and climate change. These are contexts to which science fiction cinema, with its capacity for visualizing dramatic and speculative narratives, is at once especially attuned and often reluctant to confront. Historically, there has been a strongly ideological aspect to Hollywood science fiction film, especially in the ways its narratives seek to reconcile film-industrial and geopolitical concerns. More recent configurations of production and content, though, have offered a different take on these prevailing aesthetics. Considering some varied examples of "apocalyptic" science fiction, this article argues for a new form of transnational aesthetics and politics informing the genre.

An example of this turn can be seen in the movement between the original *The Day the Earth Stood Still* (Robert Wise, 1951) and its mostly under-regarded remake.

1 This article focuses on theatrically released films, although the discussion here could equally be extended to films made for online viewing or to recent television series.

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In the later version (Scott Derrickson, 2008), Keanu Reeves's Klaatu arrives not, like his predecessor, in a sleek flying saucer but in a gaseous and porous globe, the outer shell of which evokes the appearance and fluid weather systems of our own planet. The arrival in the film of similar globes across the Earth is followed by their extraction of biological life in antediluvian reproductive pairs. In contrast to Michael Rennie's stern yet statesmanlike alien of the original film, Reeves's apparently benign Klaatu turns out to have little interest in warning the planet's inhabitants about their destructive behavior. It is the planet's warming, and its threat to the biosphere, that concerns him, to the extent that, in this instance, there is no initial effort on Klaatu's part to save humankind. Rather, Klaatu intends to save the planet by ridding it of its pestilential humans. This shift, then, places the film's concerns less within the terms of human geopolitics and more in line with the ethos of Gaia theory and millennial ecological movements.[2] Before eventually being persuaded to change his mind, in fact, this 2008 Klaatu exemplifies the most extreme viewpoint of a deep ecology perspective.

The original *The Day the Earth Stood Still* is at least prototypically environmentalist in its concerns with planetary responsibility. Klaatu visits Earth—or more pointedly, Washington, DC—to warn its leaders against their continued militarism, all in the context of the Cold War and Korean War and the development of nuclear weapons technology. Klaatu's warning involves him "neutralising non-essential technological power," which results in the temporary cessation of global manufacture and production.[3] The conclusion of the film has Klaatu address a markedly international group of scientists and military and religious leaders, in a visual echo of the then-recently-formed United Nations, whose headquarters had just opened in New York City. Klaatu's alignment with Washington, and in turn "the political aspirations of the United States," as well as his willingness to bring about consensus in this "new world order" through a unilateral show of force, makes the 1951 *The Day the Earth Stood Still* emblematic of a US-centered worldview.[4] Notably, the impending disaster foreseen in Klaatu's warning is less the end of the world than the end of capitalist productivity, as the alien visitor temporarily brings to a halt electricity-powered industry. The film's implicit endorsement of a US-centered world power, though, along with its techno-militarist-capitalist utopianism—it is the created "race of robots," high tech and apparently all-powerful, that are to "preserve the peace"—suggests that it is unconcerned with the contributing effects of technology and of consumer capitalism itself to the coming apocalypse.[5] The new Klaatu's twenty-first-century arrival in the middle of Manhattan, in contrast, targets not the seat of global political power but the heart of the dominant global economic system: the system that, the film implies, is less under threat from human activity than *is* the threat to human activity in itself.

2 See Greg Garrard, *Ecocriticism* (London: Routledge, 2004), 199–201.

3 Christine Cornea, *Science Fiction Cinema: Between Fantasy and Reality* (Edinburgh: Edinburgh University Press, 2007), 39.

4 Cornea, 40.

5 Peter Biskind, *Seeing Is Believing: How Hollywood Taught Us to Stop Worrying and Love the 50s* (London: Bloomsbury, 2001), 157–158.

The remake's insistence that potentially destructive ecological change is not so much imminent but already latent places it within the affirmative camp of climate-change science and the rhetoric of immediacy signaled by the content and titles of several recent fiction films and documentaries, including *The 11th Hour* (Nadia Conners and Leila Conners Petersen, 2007), *The Day after Tomorrow* (Roland Emmerich, 2004), and *2012* (Roland Emmerich, 2009). The more pronounced turn in recent popular cinema—from speculative blockbusters like the latter two films to family animations such as *Ice Age: The Meltdown* (Carlos Saldanha, 2006) and *WALL-E* (Andrew Stanton, 2008)—indicates an emerging "greening" of Hollywood, one informed elsewhere by high-profile US documentaries such as *An Inconvenient Truth* (Davis Guggenheim, 2006) and the Leonardo DiCaprio–produced *The 11th Hour*.[6] Beyond the obvious point that this cluster of films suggests a greater popular engagement with climate change, it is significant that some of these films reorient the idea of environmental responsibility. This reorientation includes both those responsible for climate change and the potential agents of response, with a specific focus on governments whose (in)actions are connected to potentially chronic climate change in the first place.

As Gregory Frame has shown, the evolving content of the Hollywood apocalyptic film is indicative of this move away from more active and heroic figures of political agency toward representations of political passivity or inertia in the more environmentally inflected films.[7] More often than not, this figural shift involves the US president himself, transitioning from the active leadership of Bill Pullman's fighter pilot in *Independence Day* (Roland Emmerich, 1996) to the benign paternalism of Morgan Freeman in *Deep Impact* (Mimi Leder, 1998). As does the similar *Armageddon* (Michael Bay, 1998), *Deep Impact* sketches a scenario of Earth-threatening cosmic activity and a technologically driven response. Yet it nonetheless avoids the possible context of anthropogenic climate change in the generically familiar form of a "gee-gee"—the colloquial term for a global geophysical event—in this case, a giant comet, set on a collision course with the planet.[8] Confronted by the failure of every effort to divert or destroy the approaching rock, Freeman's President Beck is rendered "powerless" as an agent of change, abandoning the Oval Office before impact.[9] When imminent catastrophe is linked more explicitly to our human care of the Earth, as it is in *2012*, Danny Glover's President Wilson effectively relinquishes his role before the imminent global cataclysm, yet his potential Freemanesque role as noble mediator is undercut both by the film's religious skepticism (e.g., his efforts to pray for the nation via a media link are cut off; religious monuments disintegrate from the impact of the worldwide Earth shocks) and by the visualization of Wilson's terror and helplessness in the face of the capital's destruction.[10]

6 Robin Murray and Joseph Heumann, *Ecology and Popular Film: Cinema on the Edge* (Albany: State University of New York Press, 2009), 3.

7 Gregory Frame, *The American President in Film and Television: Myth, Politics and Representation* (Bern: Peter Lang, 2014).

8 On gee-gees, see Anthony Giddens, *The Politics of Climate Change* (Cambridge, UK: Polity, 2009), 28–31.

9 Frame, *American President*, 195.

10 Frame, 205–206.

In a pointed move that precedes the global cataclysm of *2012*, Wilson passes moral responsibility and implicit presidential power to a young environmental scientist, Adrian Helmsley (Chiwetel Ejiofor), with the words "A young scientist is going to be worth twenty old politicians."[11] This aligns the film to some extent with *Deep Impact*'s ultimate validation of the National Aeronautics and Space Administration (NASA) and its technology and human courage as the agents of salvation: in this earlier film, the team designated to explode the comet fly themselves sacrificially into it, mitigating its devastation. But *2012* is more markedly aligned with the politics of *The Day after Tomorrow*, which is quite specific in using its climate scientist, played by Dennis Quaid, to proffer the voice of environmental reason against an acquiescent vice president, one who is resistant to implementing the economic demands of the 1997 Kyoto Protocol. In an echo of Klaatu's speech to the symbolic "United Nations" in the original *Day the Earth Stood Still*, this confrontation takes place at a fictionalized UN conference on global warming held in India (a location pointedly in the more climatically vulnerable Global South). Roland Emmerich's film, on which the climatologist Michael Molitor served as an adviser, consequently takes specific aim at US environmental policy and, more generally, at the often acquiescent politics and ineffectiveness of notional institutions of "global" government.[12]

The implicit or explicit environmentalism of these films, and the ones I turn to in the remainder of this article, may not be immediately clear, especially as, for the most part, the films deal with the narrative contexts of orbital or deep space. The films, though, are nevertheless significant to our understanding of recent climate politics and of the contemporary science fiction film for two important reasons. First, they use the exploration of space either specifically or obliquely as a narrative response to environmental crisis, thereby raising the question of how such films and representations meaningfully engage with climate concerns. Second, the depiction of outer space in these films alludes in various ways to the type of transnational, or even postnational, constituencies hinted at, though never entirely realized within, the earlier apocalyptic films. As I posit in this article, the utopianism that is a perennial feature of much science fiction cinema is a problem both alluded to and frequently worked through, and critically challenged, in these films. My aim is consequently to suggest new ways through which we might make political sense of mainstream science fiction narratives and the genre's spectacular aesthetics. I am also writing this at a time in which, against a backdrop of climatic disruption, some of the most technologically and economically powerful forces at work on the planet are elaborating science fiction–inspired means of leaving it altogether.[13] Both the films discussed here and this article itself

11 Quoted in Frame, 203.

12 See also David A. Kirby, *Lab Coats in Hollywood: Science, Scientists, and the Cinema* (Cambridge, MA: MIT Press, 2011), 177–184.

13 I am referring here specifically to Elon Musk's long-term project to colonize Mars, via his company SpaceX, and to Amazon founder Jeff Bezos's space-exploration project, Blue Origin. Both men have acknowledged their inspiration for space travel in the form of science fiction film and television, especially *Star Trek*. See Julian Guthrie, *How to Build a Spaceship: A Band of Renegades, an Epic Race, and the Birth of Private Spaceflight* (London: Penguin, 2016), esp. 226–229 and 255–260.

are therefore interventions into a wider cultural and ecological discussion that has genuinely global implications.

Toward a Transnational Aesthetics in Popular Science Fiction Cinema. Although the precise meaning of the term "transnational" needs teasing out, the potential for a transnational cinema to engage with environmental issues should be evident. The recent history of environmental politics emphasizes the difficulty of achieving consensus and addressing questions of environmental justice. In particular, key issues around climate policy relate to complex questions of international law and, above all, to a tension between the principles of the international "climate regime" and "the pursuit of material national interests" on the part of individual nations. This tension is the main stumbling block to encouraging administrations to ratify climate-change protocols.[14] The extent to which national interests and agreed-on climate policies occasionally coincide may reflect more luck than cooperation, and it is needless to stress the degree to which climate summits such as the Conference of the Parties, held most recently in Paris in 2015, are marked by the efforts to reconcile collective ideals and individual nations' desires.

As critics of international environmental policy have identified, these negotiations are dominated by the almost-unquestioned assumption that economic growth must be preserved within the terms of "the existing neo-liberal political and institutional order." Hence the "continuing insistence on market-based solutions in the climate regime complex and . . . the enthusiasm for technological interventions that do not involve fundamental re-ordering of economic priorities."[15] Both Mike Hulme and Naomi Klein have shown, in turn, how the utopian appeal of such techno-fixes, with their promise to mitigate the effects of climate change, not only underestimates the intractable political questions their application would generate (who gets to authorize or use the fix?) but also overlooks how First World "fixes" would potentially redistribute climate-change effects to the most vulnerable areas of the planet.[16]

In these contexts, science fiction cinema, and the representation of space in particular, becomes a charged cinematic field. The key geopolitical issue identified previously is how to reconcile "technological interventions" within an economic model of (so-called) sustainable development. This has significant implications for popular cinema, inasmuch as the narration and visualization of technological innovation is well suited to the aesthetic contexts of big-budget science fiction film and even defines the form in many respects. But identifying the potential conflicts and power balances informing the application of technological climate solutions has further ramifications—in this instance, with regard to how we understand the peculiar geopolitical configurations of outer space itself as a transnational or even a postnational territory. As defined by the UN treaty of 1967, all members of the global community legally share outer

14 John Vogler, *Climate Change in World Politics* (Basingstoke, UK: Palgrave Macmillan, 2016), 7.

15 Vogler, 33.

16 Mike Hulme, *Can Science Fix Climate Change?* (Cambridge, UK: Polity, 2014), 33–88; Naomi Klein, *This Changes Everything: Capitalism vs. the Climate* (London: Penguin, 2014), 256–290.

space, which is therefore beyond the jurisdiction of any one nation.[17] Transnational incentives and constructions such as the International Space Station (ISS), founded on principles and practices of cooperation across national space programs, have played a significant role in consolidating this post-perestroika—or even, to draw on the neoliberal terms for this global shift, posthistorical—idea of space as operating free from international politics and worldly tensions.[18] Although the depiction of outer space carries symbolic connotations of postnational utopia and transnational cooperation, it is nevertheless this very definition as "global" territory that gives it such dramatic scope as a contested narrative territory. As we will see, the utopian connotations of the transnational in these films give way to a more nuanced concern with the transnational as an ethical process, focusing on how managed consensus is in fact an evasion of the very concerns underpinning the drive toward collaboration.

Political theory in the context of environmental change has stressed the impact of this change on politics in general and the conceptual possibility of an isolationist national politics in particular. As Ulrich Beck argues: "The task of ensuring the health and safety of citizens can no longer be performed at national level. . . . This is the 'cosmopolitan moment' of the ecological crisis. With the appearance of ecological discourse, the end of 'foreign policy,' the end of the 'domestic affairs of another country,' the end of the national state is becoming an everyday experience."[19] Beck sees this compulsion to cosmopolitanism, a corollary of global crisis, in guardedly enthusiastic terms. He also notes that traditionally diplomatic approaches to climate policy—such as making concessions to, or not pointing fingers at, main offenders—themselves become part of the problem, with anonymity a license to continue as before. For reasons that I will discuss, though, the global(ist), or more strictly, universal(ist) connotations of the cosmopolitan, built etymologically into the word itself, are insufficient with regard to the challenges of confronting and representing climate change and its politics. Yet equally, we limit the possibilities of the transnational if we restrict it to similarly fuzzy and utopian conceptions of collaboration, diversity, or even consensus. I therefore take up Will Higbee and Song Hwee Lim's cautionary point that the transnational, in its potential vagueness, connotes "a difference that . . . makes no difference at all."[20] If the transnational is to signify anything other than shorthand for "international coproduction or collaboration," it needs to be understood in terms of the distinct "aesthetic, political or economic implications" of this collaborative process.[21] The transnational becomes most significant not in its status as a thing or a label but in its manifestation as process, and above all as a tension, in which the constituent "national" parts confront

17 UN Office for Outer Space Affairs, "Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies," http://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties/introouterspacetreaty.html.

18 All astronauts heading for the ISS, from numerous space agencies, do so from Baikonur, Kazakhstan, in the Russian *Soyuz* spacecraft. By "posthistory" here I allude to Francis Fukuyama's argument in *The End of History and the Last Man* (New York: Free Press, 1992).

19 Ulrich Beck, *World at Risk* (Cambridge, UK: Polity, 2007), 91.

20 Will Higbee and Song Hwee Lim, "Concepts of Transnational Cinema: Towards a Critical Transnationalism in Film Studies," *Transnational Cinemas* 1, no. 1 (2010): 10.

21 Higbee and Lim, 10.

each other in a way that makes their integrity and isolation impossible. "Transnational" film, in other words, represents "what really happens within the textual encounter" between one "nationality" and another, actively representing "the *trans* in the transnational as a form of *transformation*; rather than merely a movement to and fro between mutually exclusive constituencies."[22] Nor should the transnational be viewed merely as a reciprocal fusion of such constituencies, as this would render the vital aspect of movement, process, and contestation redundant.

If outer space's global commons is both an actual and a symbolic testing ground for a politics of cooperation, however, its centrality within environmentally inflected narratives often indicates a double displacement, both into extraterrestrial space and into traditional spaces, and consequently effects, of the science fiction genre. At the heart of this displacement, in turn, is the tension often assumed between science fiction cinema's spectacular generic connotations and its putative narrative content: its highly marketable capacity for "sensuous elaboration," in Susan Sontag's phrase, over and above its capacity for conceptual argument.[23] In *Deep Impact* or *Armageddon*, this tension is at least narratively and ideologically reconciled by the film's insistence on NASA-led technological solutions to eschatological harbingers. These reconciliations tend to reassert unilateral and neoliberal conceptions of global action, mainly through their obviation of human causation and their emphasis on narratives of consequence-focused "catastrophe management." Such narratives appeal to what Sontag calls the spectacular "imagination of disaster" within the genre while at the same time inserting planet saving into the neo-imperialist terms of what Naomi Klein has called the "shock doctrine."[24]

In the case of both *Deep Impact* and *Armageddon* this conflation of a technological spectacle with forms of neo-imperialist narrative is conveyed through an implicit or totally obvious affirmation, via the authenticating and persuasive power of the film image, of NASA's defining role in such processes and discourses. Such affirmation befits the agency's own consultancy role in these films' productions. Beyond the development of filmmaking technologies within its space program, NASA has been tightly connected to wider film production since the 1960s, with its own entertainment industry liaison to provide expertise for narrative features and documentaries in the form of technical advice, script analysis, and physical resources.[25] Courting NASA's official seal of approval—with the opportunities for using NASA's "brand" logo in the actual film—can be a gratifying process both for feature films, which get the added value of "authenticity," and for NASA, which gains publicity, public engagement, and the possibility of "more support from Congress."[26]

22 Neil Archer, "The Rhetoric of the Transnational: Interpretation and Identity in Géla and Temur Babluani's *L'héritage/Legacy* (2006)," *New Cinemas: Journal of Contemporary Film* 8, no. 1 (2010): 6.

23 Susan Sontag, "The Imagination of Disaster," in *Against Interpretation* (London: Vintage, 2001), 209–225; see also Barry Keith Grant, "Sensuous Elaboration: Reason and the Visible in the Science Fiction Film," in *Alien Zone II*, ed. Annette Kuhn (London: Verso, 1999), 16–30.

24 Kirby, *Lab Coats in Hollywood*, 169–192; Sontag, "Imagination of Disaster"; Klein, *This Changes Everything*, 276–278. See also Naomi Klein, *The Shock Doctrine: The Rise of Disaster Capitalism* (London: Penguin, 2009).

25 Kirby, *Lab Coats in Hollywood*, 52–53.

26 Publicist Warren Betts, quoted in Kirby, *Lab Coats in Hollywood*, 55.

NASA Cinema and the Management of Consensus. In NASA's recent high-profile consultancy job, *The Martian* (Ridley Scott, 2015), Matt Damon's botanist astronaut Mark Watney is inadvertently stranded on the Red Planet. While the film's speculations on Martian sustainability invite us to take several leaps of faith (can we really grow potatoes in Martian soil and human excrement? can we produce water on a waterless planet?), it also invites us to consider the terrestrial verisimilitude of Watney's experiences. Whether or not we believe that NASA will be economically and technologically positioned to send a team to Mars by the middle of this century, the climax of the film, focusing on Watney's rescue, invites us to ponder why this should become such an obviously global concern, to the extent that it can bring out thronging crowds to public squares across the United States, United Kingdom, and China.

The film's recourse to showing spontaneous mass gatherings at metropolitan squares, with thousands glued to live transmissions of the rescue on public screens, draws on a now-ubiquitous mediated envisioning of the mass popular event, albeit one less synonymous in recent years with space exploration. This type of reflective "world audience," integrated and collectivized through montage, has been a significant motif of apocalyptic science fiction film, in its various forms, for decades. Though emphasizing a greater degree of collaborative agency, *The Martian* draws in this instance on a similar vision of collective engagement and purpose as that witnessed in films like *Independence Day* and *Armageddon*. The important difference here is the way that *The Martian*'s somewhat hyperbolic representations of global interest respond to its particular transnational narrative configuration. In a mostly underdeveloped strand of the film, the jeopardized mission to send its homeward-bound crew back to Mars to rescue Watney, the use of a booster rocket owned by the Chinese National Space Administration (CNSA) is required. The potentially dramatic implications of NASA appealing to its Chinese counterpart for help are, in this case, regrettably played down as the CNSA willingly gives up the booster for no obvious gain, beyond ensuring its prominence as an active participant in the rescue operation.

It is not clear whether a film that underscores its final vision of transnational cooperation with the O'Jays' 1972 hit "Love Train" wants to be taken *that* seriously. Yet there are significant political contexts informing *The Martian*'s strategies in this regard. While the Chinese aspect of the film clearly inscribes the ideological tenor of the Obama administration's "pivot to Asia" in the new "Pacific Century,"[27] it also emblematizes the new cinematic "rebalance" toward Asian, and more specifically Chinese, markets at this point in history. Participation and presence to this extent do not occlude politics but rather become political—at least they reflect the new cinematic realpolitik of an American cinema increasingly pivoted toward a foreign audience that, at the time of *The Martian*'s production, was beginning to outnumber its own in terms of viewers. Opportunistically, then, or at least fortuitously, *The Martian* exploits its source novel's original engagement with China's space program, in the process allowing for the type of strategic relocation, or "Sinosensibility," that Lynda Obst identifies in various

27 See, e.g., Hillary Clinton, "America's Pacific Century," *Foreign Policy*, October 11, 2011, http://foreignpolicy.com/2011/10/11/americas-pacific-century.

recent American films, including *2012*.[28] But it also benefits from its specific status as a deep-space science fiction movie, one whose setting not only distances the film from Hollywood's erstwhile (and now less globally marketable) geographic and cultural contexts but also—in principle—"transcend[s] spatial and temporal boundaries" and in turn "eschews any political or socially relevant content."[29] The global box-office evidence of recent films such as *The Martian* and *Gravity* (Alfonso Cuarón, 2013) clearly shows the largely borderless appeal of the genre—as *The Martian* performed very strongly, if not sensationally, at the Chinese box office.[30]

In the case of *The Martian*, though, aspects of this now-familiar so-called Chinese pandering on the part of this and other contemporary blockbusters, which in its own regard complicates the film's identification as a "Hollywood" movie, should not provide a superficial distraction from its American agenda.[31] The serendipitous intervention of the CNSA in *The Martian* manages to acknowledge NASA's international partners while also, paradoxically, erasing conflicting interest or opposition both internationally and domestically. The CNSA's own stated goal of reaching Mars raises the possibility for a new space race to the planet: at the time of writing, in fact, China is preparing a combined probe and rover to orbit and land in 2020. But this element of competition is downplayed in *The Martian*, which ultimately asserts a mostly unilateral approach. The film in fact chimed with contemporary moves in government toward US-led planetary colonization within the next few decades. The Martian plan forms a key part of NASA's "Global Exploration Roadmap," as set out in the agency's 2015 Authorization Act, a bipartisan bill passed by Congress in February of that year. Here, the specific language of the bill is worth noting: "It is the policy of the United States . . . that the goal of the Administration's exploration program shall be to successfully conduct a crewed mission to the surface of Mars to begin human exploration of that planet." The bill continues with its combined emphasis on NASA leadership alongside international cooperation: "The President should invite the United States partners in the International Space Station program and other nations, as appropriate, to participate in an international initiative under the leadership of the United States." While the act, along with official output from NASA's website, highlights the importance of the ISS as a site for "develop[ing] capabilities and technologies needed for the future of human exploration," it is also keen to note that "reliance on foreign carriers for crew transfer is

28 Lynda Obst, *Sleepless in Hollywood: Tales from the New Abnormal in the Movie Business* (New York: Simon and Schuster, 2013), 74–75.

29 Doris Baldruchat, "Co-Productions, Global Markets and New Media Ecologies," in *Transnational Cinema in Europe*, ed. Manuel Palacio and Jörg Türschmann (Zurich: Lit, 2013), 13.

30 *The Martian* reaped $95 million at the Chinese box office, putting it at No. 22 on the 2015 list. *Gravity* took in just over $70 million, although this made it the eleventh most popular theatrical release in China that year (information from the website Box Office Mojo, at https://www.boxofficemojo.com/intl/china/yearly/?yr=2015&p=.htm and https://www.boxofficemojo.com/intl/china/yearly/?yr=2013&p=.htm).

31 In addition to *The Martian*, several other films from this time—such as *Looper* (Rian Johnson, 2012), *Iron Man 3* (Shane Black, 2013), *Transformers: Age of Extinction* (Michael Bay, 2014), and *Gravity*—were perceived to have created or adapted aspects of their plots or settings to accommodate Chinese characters or points of reference. See, e.g., Ana Swanson, "Stephen Colbert's 'Pander Express' Is a Brilliant Takedown of How Hollywood Sucks Up to China," *Washington Post*, October 10, 2015, https://www.washingtonpost.com/news/wonk/wp/2015/10/10/stephen-colberts-pander-express-is-a-brilliant-takedown-of-how-hollywood-sucks-up-to-china.

unacceptable, and the Nation's human space flight program must acquire the capability to launch United States astronauts on United States rockets from United States soil as soon as is safe and practically possible."[32] The timing of *The Martian*, which received extensive advice on weather and rocket science, as well as access to NASA's prototypes, seems from the agency's viewpoint a happy one.[33] The film, as already noted, represents a qualified shift in representational thinking—as well as an economic pragmatism in the Obama-era Pacific Century—in its allusion to NASA's stated ideals of international partnership. Notably, though, and in line with NASA goals, space exploration in the film is still clearly "under the leadership of the United States."

Movies like *The Martian* are in this respect interventions in the ongoing narrative around US space exploration as much as they are reflections of it. It was actually during the period of unrivaled superpower status in the 1990s when the idea of a crewed US mission to Mars, an often assumed next step following the success of the Apollo missions of the 1960s, began to flag—the first President Bush's original commitment to development of the space station and to a Mars landing notwithstanding. Bush's Space Exploration Initiative was effectively undercut by NASA's own study, which stressed the prohibitive expense of the venture and the lack of clear scientific planning, leaving the human future on Mars for a while in the minds, if not necessarily the hands, of entrepreneurs, space gurus, and the creators of science fiction.[34] *The Martian* consequently repositions NASA at the center of the discussion, effectively reinforcing a US aeronautics-industry complex that would most benefit from the Mars mission.

It is not obvious from the discussion so far what *The Martian* has to do with environmental politics, yet the latter is in fact intrinsic to its central narrative concerns with "terraforming," defined as the engineering process that would render the Martian soil and environment habitable for humans. This initially science-fictional concept enjoyed renewed interest on the back of the Mars *Viking* probes in the 1970s and the launch of the space shuttle in 1981.[35] Watney's scientifically reinforced efforts to engineer his own sustainable ecosystem afford significantly more conceptual appeal than does the film's less tangible concerns with space-flight technology. Although the film's narrative focuses mainly on Watney's effort to get off Mars, its key science-fictional *novum*—the conceit or "new thing" around which a science fiction text is constructed—is this effort to depict a viable existence on the lifeless planet. If *The Martian* reinforces the possibility and significance of human colonization of Mars, though, it has little apparent interest in this as a meaningful response to actual or near-future terrestrial concerns. Indeed, insofar as Martian terraforming is the utopian aspiration for many proponents of technologically driven climate solutions, it is actively evasive of

32 "H.R. 810—National Aeronautics and Space Administration Authorization Act of 2015," https://www.congress.gov/bill/114th-congress/house-bill/810/text. Further information regarding the role of the ISS for NASA is obtainable from the NASA website, at http://www.nasa.gov.

33 See Steve Rose, "Mars Attracts: The Cosy Relationship between NASA and Hollywood," *The Guardian*, September 30, 2015, https://www.theguardian.com/science/2015/sep/30/mars-attracts-the-cosy-relationship-between-nasa-and-hollywood.

34 Greg Klerkx, *Lost in Space: The Fall of NASA and the Dream of a New Space Age* (New York: Pantheon, 2004), 290–292.

35 Klerkx, 288.

a terrestrial climate politics.[36] *The Martian* in fact takes on the nostalgically modernist tendency of much early science fiction in its tacit assumption that our future world will be abundant in economic and technological possibilities, hardly ever hinting at the kind of near-future economic, geopolitical, and environmental contexts that could undermine this assumption. Matt Damon's suggestion at the film's Toronto Film Festival screening that *The Martian* is above all "a really optimistic and hopeful movie" underlines much of the film's appeal, especially during what he calls "really tough times." Identifying the optimistic significance of the film, as Damon did, in the contexts of the European refugee crisis hits an unusual note. Yet this does ask us to consider the meaningful connection between terrestrial catastrophes and our optimistic representations of living beyond the Earth.[37]

Insofar as *The Martian* celebrates humanity's capacity to endure beyond the Earth and therefore balances its inherent environmentalism with escapism, it exemplifies the tensions already central to popular science fiction film as a mode of environmental narrative. It does this not necessarily in its commodity function as spectacle but, more specifically, in its appeal to the outer spaces of the genre as a defining practice. This is a tension central to *Interstellar* (Christopher Nolan, 2014), in which a makeshift team of scientists and pilots, working for a near-future NASA that has been forced into clandestine operations out of a secret base in the Midwest, are sent in their ship the *Endurance* through a spatial wormhole in search of other inhabitable worlds. The motivation for this voyage is a widespread blight that has ravaged the Earth's food supply and, in turn, is reducing the level of oxygen in the atmosphere. The planet—or at least the part of the United States to which the earthly narrative is restricted—has become a dust bowl, with its civilization of farmers eking out a bare subsistence on corn crops. The *Endurance*'s mission is therefore to find a new planet to colonize while waiting for NASA's chief physicist to solve his lifelong aim of overcoming gravity, thereby lifting (some of? a few of?) the slowly starving and suffocating population off the dying Earth.

Interstellar's mind- and time-bending narrative ploys are backed up by a fair degree of detailed—though mostly speculative—science informed by Caltech physicist Kip Thorne's work on wormholes and black holes.[38] Authorial discourse around director Christopher Nolan's films, especially in interviews, often disavows the reduction of his films to mere entertainment by grounding his work "firmly in the traditionally masculine discipline of 'science.'"[39] Prerelease publicity for *Interstellar*, for instance, emphasized not only Thorne's contribution to the film's physics and concepts but also the physical difficulty and challenge of making the film itself. As David Kirby has

36 Klein, *This Changes Everything*, 288.

37 See Benjamin Lee, "Matt Damon: The Refugee Crisis Is a Reason to Release *The Martian*," *The Guardian*, September 11, 2015, https://www.theguardian.com/film/2015/sep/11/matt-damon-the-refugee-crisis-is-a-reason-to-release-the-martian.

38 An executive producer on the film, Thorne also published a popular, though still conceptually dense, science book based on the film's concepts. See Kip Thorne, *The Science of "Interstellar"* (New York: W. W. Norton, 2014).

39 The quote regarding Nolan is from Will Brooker, *Hunting the Dark Knight: Twenty-First Century Batman* (London: I. B. Tauris, 2012), 94. For prepublicity features on *Interstellar*, see especially Dan Jolin, "The Ultimate Trip," *Empire*, November 2014, 70–93; see also Tom Shone, "Christopher Nolan: The Man Who Rebooted the Blockbuster," *The Guardian*, November 4, 2014, https://www.theguardian.com/film/2014/nov/04/-sp-christopher-nolan-interstellar-rebooted-blockbuster.

shown, the liaison between scientific advisers and agencies like NASA and filmmakers themselves is vital not just to the promotional agenda of the former but also to the aesthetic aims of the latter. The assistance such liaising provides in terms of narrative and visual realism, as well as the value that accrues to films through their association with such expertise, increases science fiction cinema's impression of reality and plausibility.[40] For present purposes, though, claims to scientific "authenticity" need to be seen in light of the broader discursive positioning in such films of science and technology, within which a film like *Interstellar* plays a constitutive role. Indeed, it is precisely the markers of "hard" scientific research in and around the film that reinforces its scientific authenticity effect at the expense of any challenge to its scientistic orthodoxy. As the environmentalist George Monbiot writes, the film's acceptance of Earth's inevitable entropy and the pioneering efforts it shows to leave the ruined planet exemplify a paradoxical blend of "technological optimism and political defeatism."[41]

Monbiot in turn speculates that the film's introduction of a largely unspecific blight is a strategic ploy of the filmmakers, this being a film that, despite its strong authorial associations with Nolan, also benefits from the investment of its Hollywood codistributors Warner Bros. and Paramount. Inserting a random act of nature allows the filmmakers to forgo mention of climate change itself and hence avoid the wrath of the powerful climate-denial lobby and right-wing media (although this strategy did not stop the film from being discussed as a climate-change movie on both sides of the political media fence).[42] Less speculative, in any case, is the way *Interstellar* opts to focus so narrowly on its midwestern context at the exclusion of any other community. By only hinting vaguely at the contexts of a global cataclysm, the film effectively reinstates the United States as the only existing superpower, if not the only surviving nation, and in turn the only country able to commit already-insufficient resources to manned space travel. *Interstellar*, as previously noted, implicitly assumes a more pessimistic view of NASA's contemporary situation, and in distinction to *The Martian*, did not liaise with NASA on its production. Yet the film is essentially conservative and nostalgic in its evocation of a (re)nascent, improvisatory, and above all pioneering American space program, with the fragile-looking *Endurance* itself (a sort of shuttle held at the center of a brittle, rotating ring) being cannibalized from old, retooled pieces of abandoned spacecraft.

In their different ways—the appeal to a vague form of global consensus in *The Martian* and to the mystical depths of space in *Interstellar*—both of these films emphasize a similar sense of universalism and spiritualism to that of the photographs and images of NASA's 1960s missions. *Interstellar* dwells, for example, on lingering shots of our planet, glimpsed small, luminous, and distant from the *Endurance*'s portholes—not to mention its theory-driven computer-generated imagery (CGI) projections of planets, wormholes, and massive black holes. As Sönke Kunkel suggests, it was primarily the groundbreaking images of space, and especially those of a remote Earth seen from

40 Kirby, *Lab Coats in Hollywood*, 16.

41 George Monbiot, "*Interstellar*: Magnificent Film, Insane Fantasy," *The Guardian*, November 11, 2014, http://www.theguardian.com/commentisfree/2014/nov/11/interstellar-insane-fantasy-abandoning-earth-political-defeatism.

42 Monbiot, "*Interstellar*"; on the climate-political response to *Interstellar* in the United States, see Joe Romm, "Right Wing Attacks Media for Saying Interstellar Is about Climate Change. Seriously," *Think Progress*, November 21, 2014, http://thinkprogress.org/climate/2014/11/21/3593599/interstellar-climate-change.

orbit or from the moon, that promoted a "neutral or objective" depiction of our solar system, one whose universality would consequently "visualiz[e] the American empire's peace promise," along with NASA's ideological aim to "unite the world again."[43] It is useful to note that President Kennedy, whose 1962 Rice University speech established the end-of-decade target for the moon landing, was privately vocal in his insistence that the Apollo project was never about "preeminence in space" in and of itself (the phrase used by then NASA administrator James Webb), but simply propaganda in proving that America could overtake the Soviet Union that rapidly.[44] Buried behind the euphoric aspects of Kennedy's 1962 declaration, moreover, is the possibility that, had racing for the moon never been mooted, Kennedy's administration might have turned to specifically environmental projects "ruled out as unworkable," such as "irrigating Africa" and "desalting the oceans."[45]

Gary Klerkx's critical study of post-Apollo NASA tacitly endorses the space-frontier spirit of adventure, not unlike *Interstellar*, yet it also points out that NASA's most important work might be engineering research not specifically contributing to space travel: work of a scientific complexity and exact application in the real world beyond the comprehension of most of us and, more significantly, work with terrestrial applications less alluring than the spectacles of space exploration.[46] Although popular cinema has typically valorized dramatic manipulations of scientific truths over actual ones, the broader implication of Klerkx's study (in line with Kunkel's discussion of NASA in the 1960s) is that the economic and cultural maintenance of a space program is inextricably linked to its mediatization.[47] To use Klerkx's tellingly optical phrase, then, during a period of relative stagnation in terms of NASA's operations in space, and at a point when the agency is "short on details," it is most keen to promote "spinning visions of distant exploration."[48] Coming not long after, and just before, NASA's respective shuttle disasters (the *Challenger* in 1986 and the *Columbia* in 2003), NASA supported a crop of films that celebrate actual past and imagined future feats of exploration and resourcefulness. From *Apollo 13* (Ron Howard, 1995) through to *Deep Impact* and *Mission to Mars* (Brian De Palma, 2000), these films span a period when—to borrow Hollywood's own parlance—there was not much money on the screen from NASA's perspective; the only exception was the nascent and extremely expensive, though in its stationary orbital capacity less overtly cinematic, ISS.

The Conflicted Commons and the Aesthetics of Impasse. Several other recent films indicate their awareness of the ways in which space, conceptually and aesthetically, can work through cinematic narrative to disavow or suspend terrestrial concerns, even when—as in the case of the apocalyptic film—appearing to confront them. In

43 Sönke Kunkel, *Empire of Images: Global Media and the 1960s Remaking of American Foreign Policy* (New York: Berghahn Books, 2015), 121.

44 Klerkx, *Lost in Space*, 154.

45 Klerkx, 153.

46 Klerkx, 269.

47 On the dramatization of scientific ideas in film, see Kirby, *Lab Coats in Hollywood*.

48 Klerkx, *Lost in Space*, 267.

turn, they suggest a reflexivity with regard to the uses of space as a narrative and aesthetic medium and an uncertainty about science fiction film's capacity to respond to earthly crises. The utopian and scientistic faith in an outer-space "universality" finds itself forcibly contending with competing multilateral interests, or the incursion of terrestrial forces into the supposedly "common" grounds of deep space. Although these films still operate within the commercial terms of a global and popular science fiction cinema, their transnational dimension encourages the exploration both of aesthetic or narrative tensions within the genre and of broader ethical tensions central to our contemporary era.

To a degree, the issue here is one of perspective. As writers coming from ecocritical, political, and activist angles have observed, the rhetoric of planetary care, or of "saving" the planet, is often founded on the types of remote Earth images referred to previously, conjuring up as they do conceptions of the planet as a fragile blue marble or Christmas-tree bauble.[49] Such representations exemplify what Timothy Clark calls "scale framing," or the process by which complex issues of environmental interconnection are reduced to simplistic and manageable images. Indeed, as Clark argues, the idea of Earth as a bauble to be nurtured and protected runs counter to a meaningfully engaged environmental perspective by ironizing and defamiliarizing the sense of the world we co-inhabit. Moreover, it fosters the idea of a global cause that, as I noted earlier, actually disavows the problem of the imbalanced, competing, and conflicting geopolitical interests at play, especially regarding climate "solutions" and their varied potential impacts.[50]

In fact, the open and utopian nature of outer space's "global commons" generates its own tragedy once nations refuse to acknowledge the ethical imperatives underpinning the sustainability of outer space itself. Despite its connotations of openness and depth, orbital space, with its accumulation of active and defunct satellites, suffers from similar environmental risks to those fomented on Earth by industry and consumption.[51] This reality contrasts strongly with the more utopian associations of the spatial commons and with the political connotations of space as somehow transcending geopolitical boundaries. This tragedy of the orbital commons, and the failure of international cooperation, is the narrative catalyst for the action in *Gravity*, which begins with the detonation of a defunct Russian satellite and the catastrophic effects of its debris, which destroy a US space shuttle and kill all but two of its crew. Directed and cowritten by the Mexican filmmaker Alfonso Cuarón, produced by David Heyman's British company Heyday Films, and distributed by Warner Bros., *Gravity* largely exemplifies the type of industrial and generic negotiations at work in popular cinema. Specifically transnational auteurs like Cuarón must be adept in moving geographically and generically between more localized, smaller-scale and large-budget studio films.[52]

49 Timothy Clark, *Ecocriticism on the Edge: The Anthropocene as a Threshold Concept* (London: Bloomsbury, 2015), 33–36; Klein, *This Changes Everything*, 284–286.

50 Clark, *Ecocriticism on the Edge*, 34–35; Hulme, *Can Science Fix Climate Change?*

51 Pat Brereton, *Environmental Ethics and Film* (London: Routledge, 2016), 100–101.

52 See Deborah Shaw, *The Three Amigos: The Transnational Filmmaking of Guillermo del Toro, Alejandro González Iñárritu, and Alfonso Cuarón* (Manchester, UK: Manchester University Press, 2013).

The Martian is more obviously informed by a transnational imperative in its production contexts, which then shapes its narrative representation of transnational consensus. *Gravity*, meanwhile, though nodding to the same transnational imperatives of contemporary movie production, is considerably more ethical in its insistence—in line with Beck's previously outlined argument—on identifying specific agents of orbital pollution.

Beyond its political narrative inflections, *Gravity* is an important revision of the genre, insofar as it takes the "haptic disorientation" central to much science fiction since *2001: A Space Odyssey* as both its defining aesthetic and its source of dramatic tension.[53] The film, which takes place almost entirely within orbital space, reverses the frontier rhetoric dominant in the genre; it dwells from its initial intertitles on the impossibility of human life in space and acknowledges our reliance on a range of temporary, exhaustible, and consequently unsustainable resources and appendages. In dialogue with the more ambivalent treatment of sensory and gravitational realignments in films like *2001*, *Gravity* makes the "genetic epistemology" invoked by its spinning and colliding bodies less the source of a utopian "incorporation" of these bodies in the world, as Annette Michelson has famously argued, than a relentlessly accumulating drama of our physical contingency and fragility.[54] Using Cuarón's familiar blend of longish shots and long takes, *Gravity* positions its consistently foregrounded protagonist (Sandra Bullock's Ryan Stone) against an alternating background of deathly emptiness and lethally recurrent debris (see Figure 1). Relentlessly denied fixed points of anchorage or perspective, and creating a space in which the body is propelled without motor control, the film consistently evokes *and* denies the illusory sense of "space" promised by the genre, generating through its disorienting motion and perspective the desire for anchorage, not abandonment.

Gravity offers an important response to the ecocritical limitations of the blue bauble vision instilled through NASA photography and in the perspectival "star-child" conclusion to *2001*, with its envisioning of "the Earth as a whole . . . an achieved humanity

Figure 1. *Gravity* (Warner Bros., 2013): the drama of spatial contingency and vulnerability.

53 Annette Michelson, "Bodies in Space: Film as 'Carnal Knowledge,'" *Artforum*, February 1969, 54–63, 57.

54 Michelson, 58, 62.

in the singular."[55] *Gravity*'s chaotic events, it is suggested, have a direct link to an even more significant but mostly invisible terrestrial drama, one only implied through the breakdown of communications between the surviving astronauts and Houston: the elimination of multiple satellites due to the proliferating debris and (it is hinted) the consequent collapse of communication networks. As mission leader Matt Kowalski (George Clooney) passingly intones, "Half of North America just lost its Facebook," a remark whose flippancy only barely conceals the broader implications of our global dependency on satellite technologies for almost every facet of social, cultural, and political life, not to mention economics, transport, military activity, and intelligence. In some respects the pertinence of *Gravity* as a critical environmental text is that its real "disaster" is not up in the outer atmosphere but down in the unseen expanse of Earth.

The political thrust of *Gravity*'s orbital drama, then, is to identify the extension of climatic pollution into the "big sky" within which space exploration itself is hardly the solution to the problem and may in fact be a part of it. NASA is also a villain of the piece in this respect, an idea quite pointedly underscored by the rapid evisceration in the film of the ISS, torn apart in the second orbit of lethal debris.[56] Given the environmentalist tenor of Cuarón's work in his previous film, *Children of Men* (2006), and its accompanying DVD documentary, *The Possibility of Hope* (2007), *Gravity*'s orbital contexts suggest at first a surprisingly escapist departure. Yet it is quite logical in environmental terms, and a natural extension in this trajectory, that Cuarón should underplay the terrestrial contexts of *Gravity*, and with it the possibility for a more familiar "consequence-based" narrative resolved by the very agents of environmental crisis. The implied, globally networked catastrophe of the film is displaced in favor of its potential cause (the Russian satellite detonation) as the actual problem and focus. In the process, the film invites a thrilling immersion in the cinematic remoteness of movement in space while also calling into question the implications and evasions of this space. One way it does this is to find cinematic equivalences for the absence of control experienced by its protagonists, mainly by denying the film's viewers any clear sense of axis in classical cinematographic terms: as Cuarón has put it, in this film "there is no up or down; nobody is sitting in a chair to orient your eye."[57] *Gravity*'s spatial dynamics, in fact, reverse the pervasive tendency in many CGI science fiction films to render the physics of mobility almost entirely subject to the whims of its protagonists. Thus, as Thomas Elsaesser perceptively remarks, the comparative function of CGI effects in a film like *Avatar* (James Cameron, 2009), where the Na'vi bound effortlessly across vertiginous spaces, is effectively to convert thin air into water, suspending gravitational laws.[58] In *Gravity*, every rerouting jolt, every uncontrollable spin, and every flailing and failing grasp of its protagonist's hands, reinforces its dramatic pull back toward solid ground, the planetary backdrop that is its implicit subject.

55 Clark, *Ecocriticism on the Edge*, 4–5.

56 Brereton, *Environmental Ethics and Film*, 100–101.

57 Quoted in Kristin Thompson, "*Gravity* Part 2: Thinking Inside the Box," *Observations on Film Art*, November 13, 2013, http://www.davidbordwell.net/blog/2013/11/12/gravity-part-2-thinking-inside-the-box.

58 Thomas Elsaesser, *The Persistence of Hollywood* (London: Routledge, 2012), 296.

The similar emphasis on vulnerability and contingency in *The Martian*, and its appeal to a form of outer-space "shipwreck" narrative, suggests its affinity to *Gravity*, yet the latter departs from *The Martian* in insisting that narrative resolution will not be found in fortuitous global consensus and lucky narrative interventions. Unless it is an unfeasibly handsome astronaut appearing in your dreams, as Clooney's character does for Stone toward the end of the film, no *deus* of any national form will emerge from out of the machine or with any technological fix. The crew of the Chinese *Tiangong* station by means of which Stone makes her eventual return, like the international crew of the ISS, are long gone in *Gravity*, which makes collective global initiative conspicuous by its absence. Cuarón's film is especially instructive in its unwillingness to accept the utopianism of either the spatial commons or international technological collaboration. It points instead to a kind of cinematic science fiction focusing precisely on the problems of such utopianism and techno-scientism in the current geopolitical climate.

In a slightly different way, *Sunshine* (2007), from the English director-writer team of Danny Boyle and Alex Garland, engages specifically with both the aesthetics of transnational production and the utopianism of collective scientific endeavor, epitomized by environmental science fiction movies such as *Deep Impact*. Set in a notional 2057, and in the narrative context of a dying sun, Boyle and Garland's film—a $50 million production by Fox Searchlight, the British company DNA Films, and the UK Film Council—has a crew of eight assorted astronauts and scientists embarking on a mission to reignite our star. There is an implicitly utopian enterprise at work here: as the ship's resident physicist Capa (Cillian Murphy) informs us, all of the planet's remaining fissile material has been used to build the nuclear bomb designed for the mission. Their ship, *Icarus II*, is on the second mission of its kind after the first *Icarus* was lost en route. On their way past Mercury, the crew of the *Icarus II* discovers the first *Icarus*'s distress signal and locates the stranded ship not far from the sun, which leads them to make the fateful decision to rendezvous with the stricken craft.

Unlike its NASA-endorsed predecessors, *Sunshine* is more pronounced in its environmental focus, with its emphasis on transnational collaboration (at both the narrative and the production level) and the collective relinquishing of the world's nuclear arsenal. Yet like the later *Interstellar*, it is also evasive of more imminent environmental concerns, including its decision to allegorize ecological collapse via a speculatively fictional cosmological event that removes human action and responsibility from the equation. In the same way that *Interstellar* uses Kip Thorne's physics as part of its authentication strategy, *Sunshine*'s prepublicity and packaging also benefit from the consultancy of Brian Cox, the Manchester University physicist and BBC science broadcaster. Cox contributed a commentary track to the DVD and discussed the film across a number of science media forums.[59] Cox also came up with a scientific theory (recounted in *New Scientist* magazine) on why the sun was dying billions of years before its anticipated time, although this theory is never actually discussed in *Sunshine*.[60] This scientific ploy was

59 Kirby, *Lab Coats in Hollywood*, 48.

60 Rowan Hooper and Zeeya Merali, "Science Fiction Movie Review: *Sunshine*," *New Scientist*, March 15, 2007, https://www.newscientist.com/article/dn11385-science-fiction-movie-review-sunshine.

intended to make the star's death more relatable for present-day audiences—although from an environmental perspective, this scientific authenticating of a presently outlandish fictional event makes the film somewhat problematic in its approach.

Sunshine is astute enough, however, to identify the intrinsic nihilism and what I call here the aesthetics of impasse underpinning its narrative and environmental politics. When the first *Icarus* is discovered, the crew members are found to have apparently committed suicide by exposing themselves to the sun's unshielded light. Its improbably surviving captain, Pinbacker, now a skeletal carapace of scorched flesh, speaks of returning the human race to its origins as (star)dust, of sending everyone "back to heaven" in the sun's fire. Far from being merely the insane obstacle to narrative resolution, Pinbacker vocalizes the scientifically inevitable fact of future solar death and entropy. With Capa striving ultimately to evade Pinbacker and detonate his bomb inside the star, *Sunshine* thus leans toward the optimism of human achievement and scientific intervention in and over the "natural" order of things, including the theoretical promise of a technologically assisted eternal sun. Yet Pinbacker more specifically gives voice to the film's own formal and generic impasse: its ambivalent oscillation between action and inertia, engagement and oblivion, the reality principle and the death drive. The film's striking opening image reveals an expanding, dazzling disc of fire filling the screen, which then turns ninety degrees to reveal itself as the vast, convex sun shield at the front of *Icarus II*. From its start, then, *Sunshine* remains split between the human business of doing a job in space, emphasizing the ship's metallic technology, grayish work stations, and confined meeting spaces, and the spectacular immersion in the blinding, absorbing totality of the CGI star. Balancing the detailed and often laboriously slow depiction of everyday labor on and around the ship with the effortless incorporation into the sun's light and heat, the film itself hesitates between these polarities.

The same hesitation manifests in the character of the ship's captain, Kaneda, whose reticence hides a fascination and preoccupation with the fate of his predecessor seven years earlier. This ambivalence eventually contributes to his death, when he hesitates toward the end of a repair job on one of the shield's damaged panels. Failing to hasten toward the safe end of the shield as it rotates once more toward the sun, the captain turns the wrong way, both captivated and destroyed by the onrushing solar wave. As Vivian Sobchack eloquently puts it, the film in this sense exemplifies its "conflict between (and yet conflation of) scientific empiricism and spiritual ecstasy."[61] The moment of Kaneda's death, like Capa's eventual detonation of the bomb, is conveyed through an overwhelming density of CGI visuals and sound. (Kaneda's demise, the key case in point, has the screen figuratively burn up in white heat while the soundtrack distorts with white noise and screams.) These are at once the money shots of big-budget sci-fi aesthetics and the points of no narrative return; "both specularity and spectacle," writes Sobchack, "are paradoxically overwhelmed at the very moment of their ultimate fulfillment."[62] *Sunshine* in this way highlights the inherent paradoxes and tensions within environmental and apocalyptic sci-fi more broadly,

61 Vivian Sobchack, "Burnt by the Sun," *Film Comment*, July–August 2007, 30–35, 33.

62 Sobchack, 30.

focusing on the genre's tendencies to obviate or offset its representation of crisis via sublime spectacle or utopian resolution. In the specific contexts of the environmental, apocalyptic genre, the film encapsulates the stalemate between generic expectation and the possibility of engagement. In the process, *Sunshine* aptly dramatizes the inertias and impasses attending real-life efforts to engage with environmental crisis.

In the case of *Sunshine*, this impasse, a defining hallmark of the recent transnational science fiction film, also articulates the film's particular tensions between its "national" origins and its budgetary and formal obligations to the global mainstream. This is not the only way in which Boyle and Garland's film contends with the dominant motifs of the genre in its earlier Hollywood manifestations. In this instance, the film's strategic mixed-nationality casting plays out its own set of tensions (actors from Ireland, England, Australia, New Zealand, Japan, Malaysia, and the United States perform parts). With two exceptions (Hiroyuki Sanada's Kaneda and Michelle Yeoh as Corazon), the cast members speak with a uniform and general American accent. This consequently imposes a type of consensus or unilateralism on the film's narrative and conforms to the traditional generic expectations of such films. The film's strategy to homogenize its crew, in turn, is problematized by viewers' potential knowledge of the actors' national backgrounds, which jars against the film's notional appeal to a genuinely global course of action not led by any specific national interests.

The film in this way raises the question of whether, like the expectation of spectacle, linguistic uniformity and group conformity are other forms of generic imposition. Such aspects of generic verisimilitude may also reiterate cultural conceptions of global consensus as merely the naturalization of a specifically First World and ethnically white agenda, reinforced by rationalism and scientism.[63] Here, though, the essentially transnational tensions between homogenization and fragmentation inform the film's narrative in very specific ways. Films supported by NASA have historically been unable to show any damaging conflict or breakdown in the system.[64] In the case of *Sunshine*, by contrast, consensus within the crew, compelled or otherwise, will not be held in check. Kaneda's death, and at the same time the fateful destruction of the ship's oxygen garden, is an indirect consequence of Capa's earlier decision, not unanimously supported, to rendezvous with the *Icarus*. Capa's decision led to a computational trajectory error on the part of Benedict Wong's navigator, Trey, which resulted in the damage to the shield panels. When it becomes apparent that the *Icarus II* is a suicide mission, and that the remaining oxygen can support only a limited crew, any residual utopianism on the part of both film and crew rapidly declines. Crew members fight over their right to survival, the ethics of killing a guilt-crippled Trey are briefly debated and resolved in favor (although he kills himself before his fellow crew members get the chance), and for a while the individual compulsion to survive overwhelms the possibility of collective and sacrificial action. Generically prescribed consensus thus devolves into partisan politics and the defense of self-interest.

63 On the naturalization of whiteness in science fiction film, see Sean Redmond, *Liquid Space: Science Fiction Film and Television in the Digital Age* (London: I. B. Tauris, 2017), 103–114.

64 Kirby, *Lab Coats in Hollywood*, 55.

Like *Sunshine*, *Prometheus* (Ridley Scott, 2012), a long-awaited prequel to the same director's *Alien* (1979), exemplifies the evolving transnational character of contemporary science fiction and is equally astute with regard to the genre's environmentalist pretensions and ideology. As Michael Ryan and Douglas Kellner note, *Alien* exemplified 1970s American science fiction's political turn in its emphasis on the corporation as the dominant, supranational power—in this case, in the form of the largely unspecified yet ever-present "company" for whom the ship's crew work and whose well-being—indeed, existence—is secondary to the company's rationalized concern for exploitation and profit.[65] The idea that the corporation and powerful individuals act above and beyond the jurisdiction of individual nations is a by-product of neoliberalism's deregulating, free-market principle—thus its use as a motif not only for the more science-fictional plots of James Bond movies but also in any number of science fiction films representing the chaotic and deregulated spaces of late capitalism. These include movies like *Elysium* (Neill Blomkamp, 2013), on the partition of the state itself between an effective slave class and autonomous, guarded enclaves; *Elysium* in fact literalizes these distinctions by transferring the gated communities of the wealthy to orbital space itself, in the form of a floating city in the sky.

Set toward the end of the twenty-first century, *Prometheus* in some respects offers more of the same by orienting its narrative around the Weyland Corporation, with its seemingly inexhaustible capital and supranational spatial reach. An inflection on the original *Alien* is to make the *Prometheus* mission an intrinsically environmental one. In this instance, an archaeological discovery apparently pointing to both the existence of alien life and an extraterrestrial basis for human existence leads the corporation's wizened owner to embark on a quest for his own origins and, as one character enigmatically puts it, the opportunity to "save ourselves." This implicit acknowledgment of near-future earthly demise is reinforced not through any specific terrestrial evidence but through the absence of Earth itself as a visible point of reference. Beyond the film's opening scene on the Isle of Skye and the brief, perhaps foretelling allusion to an Ebola outbreak in Africa (a visualized memory "downloaded" from the ship's archaeologist), Earth functions in the film only as a memory, another visual image or special effect. Thus Vickers (Charlize Theron), the Weyland executive supervising the mission, decorates her quarters with "natural" landscapes on a digital screen: forests and rivers, deer on a snowy hillside, and fields of corn swaying in the sunlight (see Figure 2). These same idealized and nostalgic images of organic nature define the "postnatural" imagination of environmentalist Hollywood in films such as *Soylent Green* (Richard Fleischer, 1973) and *Wall-E*, both of which literally project "lost" pastoral visions of the Earth from the imagined future.

Weyland is revealed to be in suspended animation on board the ship, and once awakened, he sets out to meet what he hopes is his maker. His plan takes a metaphorical rather than literal turn, though, when the alien humanoid awoken by the mission kills him. The ancient culture whose remains the *Prometheus* crew members discover on their distant planet turns out to be far from pastoral or utopian; rather, it expired

65 Michael Ryan and Douglas Kellner, *Camera Politica: The Politics and Ideology of Contemporary Hollywood Film* (Bloomington: Indiana University Press, 1990), 183.

Figure 2. "Earth" projected in *Prometheus* (20th Century Fox, 2012).

when its mass production of organic biological weaponry turned virulently wrong. In its rejection of Weyland's utopian—and entirely self-interested, as the film is keen to stress—pursuit of cosmological meaning, *Prometheus* assumes a distinctive ecological character as well as a comic pessimism. In its production context of a global recession and a more incipient global recognition of climate politics, it is notable that *Prometheus* should so violently condemn its entrepreneurial traveler. We can in this respect compare the film to the distinctively Clinton-era science fiction film *Contact* (Robert Zemeckis, 1997), made within the technologically and economically optimistic period of the late 1990s dot-com bubble. In this film, apparent radio signals from life outside our solar system convey directions to construct a machine to establish actual contact. In response, the US government makes a unilateral decision to build the machine at an expense unimaginable after the Great Recession. After an activist disastrously sabotages the machine at its public unveiling, the film's astrophysicist protagonist, Ellie Arroway (Jodie Foster), learns of a second, identical construction built by S. R. Hadden (John Hurt). Hadden is an eccentric billionaire industrialist and space enthusiast, the sponsor of Arroway's blue-skies research into alien life, and a man whose economic reach and manipulation of information appear to go beyond that of any government. *Prometheus* clearly shares many of its narrative precepts with *Contact*, though inflecting them toward different signifying ends. It, too, works from the starting point of capitalist venture operating outside of governmental control and keeps its corporate benefactor mostly at hologram's length.

Importantly, *Contact* toys with narrative unreliability by sending Arroway on her own wormhole journey, which she experiences as lasting most of a day, despite terrestrial video evidence that her space pod fell straight through the machinery in seconds. While the film's ending introduces the intriguing possibility of a space-age fraud committed to generate construction capital, it is ultimately conciliatory, leaving the spectator free to take space exploration as a very expensive leap of faith into the unknown.[66] *Prometheus*, in contrast, offers neither productive resolution nor personal redemption. Its neo-Darwinism offers a pessimistic counterargument to *Contact*'s airy fusion of science and theology. By taking this line, *Prometheus* implicitly calls

66 Arroway's private video camera, we discover, while recording only static, recorded eighteen hours of it.

into question the foundational principles of the earlier film, substituting an anti-capitalist skepticism for *Contact*'s abundant faith in expenditure and disinterested scientific inquiry.

As I discussed at the beginning of this article, a climate politics seeking to rethink the capitalist-realist dream of sustainable growth involves targeting the latter's reliance on technological interventions to resolve climate change. *Prometheus*, in an echo of this discussion, implicitly questions the role of big industry and of high-tech ventures in the contexts of wider environmental action. It also focuses on the ideological and representational problems inherent to science fiction's technological utopias. *Interstellar*, as we have seen, uses the name of NASA without official endorsement and is ambivalently positioned. It nostalgically evokes both the utopian mediatization of the Apollo era and the pioneer spirit of libertarianism through its resistance to big government and its tacit endorsement of individual endeavor.[67] But this blend of technologically driven nostalgia brings its own ideological drawbacks. The throwback-futurist space colony glimpsed at the end of *Interstellar*, with children playing baseball in a huge, verdant, rotating cylinder, is partly modeled on the work of Princeton physicist Gerard O'Neill, who described and advocated such habitats in *The High Frontier: Human Colonies in Space* (1976) (see Figure 3).[68] O'Neill's visions for our post-terrestrial future appealed to the Euro-American frontier ethos that had informed NASA since the 1950s, especially through the distribution in the agency of Frederick Turner's nineteenth-century tract "The Significance of the Frontier in American History."[69] *Interstellar*'s vision of the technologized spatial future has a folksy throwback appeal to the same midwestern dust-bowl aesthetic of Ray Bradbury's novel *Martian Chronicles* (1951), but as a result it offers up a human future that seems almost exclusively white.[70] Awkwardly, the space colony in *Interstellar* closely resembles the similar orbital wheel, itself modeled on O'Neillian ideas, in *Elysium* (see Figure 4). *Elysium* formally schematizes its narrative biopolitics not just in its literal spatial separations but also in the way it opposes different aesthetic regimes. Airy depth of field, strong color, and undisturbed camera movements up on the colony contrast with airless and rusty monochrome, densely packed frames, and agitated camera movements down on the planet's surface. *Prometheus*, similarly, draws attention to ethnic and corporate division in its separation between Weyland's and Vickers's pristine, ethnically white corporate sphere, with its gleaming surfaces, three-dimensional projections, and simulacra, and the "factory floor," as it were, comprising the assemblage of pilots, technicians, scientists, and security officers making up the crew.

Yet *Prometheus*'s crew is at once more transnational and collective, though in some respects more alienated, than that of the original film. In *Alien* the only nonwhite member of the *Nostromo*, played by Yaphet Kotto, was one of the affable and markedly

67 In an early scene, McConaughey's pilot challenges the promotion, by his daughter's schoolteachers, of a federal textbook denying the moon landings.

68 A high fly ball, passing the central point of the tube, "falls" into a window high above the players' heads. See Thorne, *Science of "Interstellar,"* 290. On O'Neill, see Klerkx, *Lost in Space*, 66–80.

69 Klerkx, *Lost in Space*, 151–152.

70 See Phil Hoad, "Good Ol' Future Boys: *Interstellar* and Sci-Fi's Obsession with Americana," *The Guardian*, November 4, 2014, https://www.theguardian.com/film/filmblog/2014/nov/04/interstellar-sci-fi-americana-movie-symbolism.

Figure 3. An O'Neillian space colony in *Interstellar* (Warner Bros., 2014).

Figure 4. An O'Neillian space colony in *Elysium* (Alphacore / TriStar Pictures, 2013).

lower-class mechanics. In *Prometheus*, in contrast, the black British actor Idris Elba plays the ship's captain. The wider crew, meanwhile, assembles South African, European, and American actors, including Swedish actor Noomi Rapace as the archaeologist Elizabeth Shaw. At the same time, like *Sunshine*, *Prometheus* resists assigning an overly utopian or sentimental significance to its multicultural crew. If they achieve anything over the course of the film, it is only mitigation of the environmental catastrophe that their archaeological mission digs up and provokes, as their disturbing of a slumbering alien forebear restarts the aliens' mission to eliminate humans from Earth and colonize the planet. Theoretical egalitarianism among the hired hands, meanwhile, is undercut by a hard-nosed materialism. *Prometheus*'s free agents are a socioeconomic step up from the exploited proletarians and military grunts of *Alien* and its sequel *Aliens* (James Cameron, 1986), yet in contrast to the earlier films, they are disenfranchised from any collective identity, precariously dependent on temporary contracts with remote billionaires. During the posthibernation breakfast, an edgy geologist rebuffs the friendly approaches of the crew's resident biologist with the statement that he is on board

only "to make money." Subsequently, he laughs off Shaw's opening presentation—her claims to have unearthed proof of extraterrestrial life—as "bullshit." *Prometheus* in this way reveals how alienated its notionally nationless and classless crew are from one another because of nothing other than their own participation as hired bodies within the biopolitical regimes of neoliberal capitalism.[71]

Underpinning *Prometheus*'s coolly cynical vision of the environmental sci-fi film, then, is a reworking of the genre's standardized motifs of collective work, especially as seen in earlier films such as *Deep Impact* and *Armageddon*, with their more uniformly US-centered cast of characters. In these earlier films, collective action is unilateral American action, converted into a global response mainly via the narrative proxy of communication and the diegetic world audience. Although the move to a more transnational collective in these recent films partly responds to transformations within the industry and its wider exhibition (as already noted), films such as *Gravity*, *Sunshine*, and *Prometheus* do not exploit this opportunity in the service of a specious global harmony. Rather, they dramatize these contexts themselves, using their speculative transnational constituencies to explore the difficulty of collective action. Introducing this context within the terms of apocalyptic, environmental science fiction is more than a mere adjustment of prior representations, however. To explore the limitations of the cinematic environmental collective is also to question its formative generic and ideological value and, in this instance, the way it can obviate the very contexts such films touch on. In other words, the dysfunctional environmental sci-fi film casts light on the ease with which questions of immediate terrestrial import readily transfer not so much to the speculative terrain of the near future but to the extraterrestrial realms of deep space, where such questions have often been generically and aesthetically diffused.

Conclusion. As James Lovelock, environmental scientist and progenitor of Gaia theory, has recently put it, the human tendency toward self-interest and tribalism is such that even potential environmental disaster fails to make us respond in global collective terms (as the struggles of the Conference of the Parties initiatives, even on this global political level, demonstrate). It is for this reason, Lovelock posits, that the most potent incitement to worldwide "united response" has traditionally come in the form of science fiction—for example, "an attack by an alien force" or, in the case of films from *Deep Impact* to *Interstellar* to *Sunshine*, inimical cosmic or terrestrial hazards.[72] Although mainstream science fiction cinema, harnessing the visualizing powers of CGI, is well placed to engage speculatively and imaginatively with the contexts of climate change, many such films touching on the latter are located ambivalently by virtue of their own generic form. Hollywood's long-standing relationship to organizations like NASA, while helping to foster scientific legitimacy and realism, and in turn the wondrous, otherworldly evocation of outer space, has also contributed to an often uncritical endorsement of policy. This has sometimes been in the service of a vaguely

71 See Michael Hardt and Antonio Negri, *Empire* (Cambridge, MA: Harvard University Press, 2000), 22–41.

72 James Lovelock, *A Rough Ride to the Future* (London: Penguin, 2014), 148.

universal or acquiescently post-terrestrial vision and to the detriment of any committed treatment of environmental politics.

As I have argued, the makers of science fiction cinema, especially those films located in the traditional domains of space, find themselves at a particularly transnational juncture, in terms of structures and practices of funding, production, casting, and exhibition, and also in their representational response to the geopolitics around climate change. In terms of its capacity to represent and engage with environmental contexts, a transnational and popular science fiction typically contends with a set of inherent tensions: between the planet itself and the alterity of space, between collective and national interests within a putatively "global" narrative and production context, and between the potentially nihilistic lure of spectacle and the summons to active engagement. Historically, and especially in the context of Hollywood, commercial and ideological pressures have manufactured consensus, limiting the possibilities of working through these tensions and of moving beyond what I have termed the aesthetics of impasse. The example of recent films suggests, though, that this impasse, and the shortcomings of the genre's environmental politics, can function as the texts' aesthetic and dramatic core. This does not in itself deflect the films' coherence within the spectacular economies of popular science fiction cinema, but it does suggest a vital new critical and reflexive approach to the genre. ✻

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