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**Brent Ryan Bellamy and Sean O'Brien**

**Solar Accumulation: The Worlds-Systems Theory of *The Expanse***

Living in space makes certain things obvious. Air, water, even food are vital necessities and powerful choke points for control. In the Syfy television series *The Expanse* (2015-), a form of interplanetary combined and uneven development recalibrates the motivational urgency behind these most rudimentary metabolic requirements of reproduction.<sup>1</sup> Even under the best of circumstances, such human needs and resource limits produce a finite future horizon. As ships dock at Ceres Station in the first episode, “Dulcinea,” a voiceover begins:

Ceres was once covered in ice. Enough water for a thousand generations. Until Earth and Mars stripped it away for themselves. This station became the most vital port in the Belt, but the immense wealth and resources that flow through our gates were never meant for us. Belters work the docks. Loading and unloading precious cargo. We fix the pipes and filters that keep this rock living and breathing. We Belters toil and suffer without hope and without end, and for what? One day, Mars will use its might to wrest control of Ceres from Earth, and Earth will go to war to take it back. It's all the same to us. No matter who controls Ceres, our home, to them we will always be slaves.

These words are spoken by an unnamed Belter agitator (Kyle Gatehouse). He introduces Ceres's history and the plight of the Belters, whose number lies somewhere between fifty and a hundred million. Developed by screenwriters Mark Fergus and Hawk Ostby, the series envisions a colonized solar system replete with a United-Nations-controlled Terra and Luna, a military dictatorship on Mars, and a densely populated asteroid belt that serves as a peripheral extraction zone for advanced economies in the core. It is a kind of three-worlds model for the twenty-third century. Ganymede, Jupiter's largest moon, serves as the breadbasket of the geopolitical—or in this case *solarpolitical*—region known as the “outer planets,” supplying food to settlements on asteroids-turned-space-stations such as Ceres and Eros, while water comes in the form of ice mined from Saturn's rings. Settlements in the Belt depend on the interplanetary supply chains of a vast infrastructural distribution system for their basic necessities. Late shipments are a matter of life and death. As the unnamed Belter speaks, the camera introduces Ceres station, tracking from the docks—through loading bays and the upper levels lush with greenery and foliage—down to the Belter's part of the hollowed-out asteroid. The speech ends as the Belter looks up at a large screen that displays the message: “WATER RATIONING REMAINS IN EFFECT.”

In its attention to scarcity, *The Expanse* is not like most other space operas. David N. Samuelson suggests that space opera “requires hypotheticals” such as “faster-than-light [FTL] travel, breathable atmospheres

and edible foodstuffs on other worlds, not to mention easy communication with alien intelligences” (193). The ease of travel, availability of habitable planets (*Minshara*-class or otherwise), and assured nature of communication ties classic space opera to anthropocentrism: not only are the solar system, galaxy, and universe fit for human exploration—humans will find the essentials for life out in the stars—but alien life and alien intelligences will be found to resemble humanity in crucial ways or to use human-compatible or -adaptable technologies and infrastructures. This is not to say that space operas are not also full of conflict, far from it. Rather, as Graeme Macdonald argues in “Improbability Drives,” the logic underpinning many space-opera storyworlds indicates an unspoken relationship between *resources* and *narrative possibility* wherein the imagined future full of abundance is rife with drama and conflict that is rarely limited in the way one might expect given the resources necessary for massive spaceship battles, interstellar travel, and multisystem habitation.

*The Expanse* radically curtails each of Samuelson’s storyworld elements: rather than FTL travel, the Epstein fusion drive; rather than breathable atmospheres, the cold harshness of space-suit living; and rather than easy communication, ceaseless inter-human conflict. The series offers a version of interplanetary science fiction bound to the solar system, where inter-colony communication remains a challenge and resources scarce. For these reasons we see *The Expanse* fitting Jerome Winter’s study of New Space Opera. Winter describes the transformation that has taken place in space opera in the past several decades: “The buoyant optimism and vast immensity of traditional space operas have been deflated and downsized into a post-imperial melancholia, living in the shadow of its former boisterous glory” (6). Winter argues that New Space Opera “underscores its nostalgia for future infinity even as it negotiates the foreclosure of such a futurity by the catastrophe of contemporary history” (6).<sup>2</sup> *The Expanse* models this tension as it weighs a narrative of geopolitical decline and ecological exhaustion against a speculative fantasy of continuity and growth.

As much as *The Expanse* seems to diverge from the well-worn paths of classic space opera, it conforms in other ways to a prevalent mode of storytelling in this day and age of prestige television. Though *The Expanse* matches prestige television *aesthetically*—cinematic chapters rather than episodes, dark lighting, each moment related to a larger frame, sad and violent male characters, and so on—it does not have the luxury of an HBO funding model. In May 2018 during its third season, the series was one of Syfy’s highest rated shows, yet the number of live viewers was not high enough for the station to produce future seasons. The series faced cancellation, but by month’s end Amazon announced it would produce a fourth season. Here the mode of production of television narratives can be seen to be undergoing its own transformation, as streaming becomes the way audiences watch serial drama today.<sup>3</sup> We can also add *The Expanse* to the list of Canadian-American co-productions of science-fiction television “filmed in Canada but to all appearances American in content” (52) provided by Andrew Milner in

*Locating Science Fiction: The X-Files* (1993-2002), *Stargate SG-1* (1997-2007), *Smallville* (2001-2009), and *Battlestar Galactica* (2004-2009).

Cinematically, the series offers a realist take on the sf premise of interplanetary development and aims to represent the actualities of space travel with an admirable degree of technical accuracy. The camera work that accompanies the opening voiceover operates as a world-building tool: the series maps the differentiated and stratified zones of the space station as the unnamed Belter explains how it all took shape. The camera movements are drone-like, though much of the background seems computer-generated. It is only as the shot catches up with a surveillance drone moving through the air tunnels that the drone-like movement of the imagined camera lens is revealed to be a figment of the mind's eye. The camera tasks the audience with something that none of the characters or the technology of the series can do: mapping the seemingly disconnected spaces of the series.

Employing a cast of lead characters rather than any single protagonist, *The Expanse* unfolds following the destruction of a water hauler called *The Canterbury*. The subsequent lack of delivery creates a water shortage on Ceres, which serves as a catalyst for mounting political unrest and grants the camera access to sprawling locations in the solar system. The series tells the larger story in its own manner, with its own approach, threading together multiple narratives from the novels as well as backstory elements from a series of novellas. In its televisual form, *The Expanse* uses a set of devices in order to present the totality of the storyworld system it envisions. The highly stylized opening credits jump from location to location in cartographical detail: establishing shots map the spaces of solar capital, tracking shots trace complex infrastructural systems of life support on asteroid settlements, drones offer otherwise inaccessible views of the internal conduits of space stations, and technologically advanced handsets allow characters to plot the timelines and travel routes of other ships in 3D.

Drawing on Giovanni Arrighi's model of a "systemic cycle of accumulation" (*The Long Twentieth Century* 6; emphasis in original), this article proposes that *The Expanse* offers an image of a *Solar worlds-system*, by which we mean an interplanetary system of capital accumulation that reproduces the structure of twentieth-century geopolitical economy at the level of the solar system.<sup>4</sup> That is, *The Expanse*, at one and the same time, imagines new cycles of accumulation founded in the planetary system and premised on ecological crisis on Earth and provides a re-narration of the end of the cycle of accumulation that has been called the long twentieth century or the American century, which exasperated Earth's climate crisis in the first instance. If, as Robert Brenner argues, contemporary economic stagnation results from the over-accumulation of fixed capital, then the development of the storyworld in *The Expanse* provocatively suggests that the very thing that threatens to end human civilization as we know it—that is to say, catastrophic climate crisis—is precisely the condition that will allow for a new cycle of accumulation to emerge after the mass devaluation and destruction of fixed capital on a global scale. Moreover, by collapsing the necessities of life with

the necessities of production and accumulation, *The Expanse* naturalizes its vision of space capitalism. We do not mean *naturalize* in the sense of being inevitable or irrefutable; rather we point to the way that the series transforms the earth-bound logic of enclosure into an absolute law of the Solar worlds-system.<sup>5</sup> The imaginative capacities of the series vividly illuminate its political unconscious: the series' focus on the scarcity of habitable environments in space indexes an already emerging reality here on earth, from lack of access to clean water in Flint, MI, and many First Nations reserves in Canada to severe desertification across sub-Saharan Africa. *The Expanse* is thus a pivotal narrative that promises a new interplanetary cycle of accumulation and its decline all at once, a fantasy of continuity that simultaneously dramatizes the contemporary, real-world crisis of futurity.

**Arrighi in Space.** Since *Buck Rogers, Chapter Two: Tragedy on Saturn* (1939) and *Flash Gordon Conquers the Universe* (1940), sf cinema has used on-screen text to introduce its fantastic settings. In much the same way, *The Expanse* uses expository slug lines to introduce its storyworld:

IN THE 23<sup>RD</sup> CENTURY, HUMANS HAVE COLONIZED THE  
SOLAR SYSTEM  
THE U.N. CONTROLS EARTH  
MARS IS AN INDEPENDENT MILITARY POWER  
THE INNER PLANETS DEPEND ON THE RESOURCES OF THE  
ASTEROID BELT  
BELTERS LIVE AND WORK IN SPACE  
IN THE BELT AIR AND WATER ARE MORE PRECIOUS THAN  
GOLD  
FOR DECADES, TENSIONS HAVE BEEN RISING  
EARTH, MARS & THE BELT ARE NOW ON THE BRINK OF WAR  
ALL IT WILL TAKE IS A SINGLE SPARK.

Perhaps a better analog than the film adaptations of pulp stories and comic serials would be Ridley Scott's *Blade Runner* (1982), which describes political tensions similar to those found in Fergus and Ostby's series. Like *Blade Runner*, the stakes of *The Expanse* are set at revolution. This tension registers in the musical cue played over the scrolling text, which matches the grating drone of Vangelis's film score. The typeset in *The Expanse* adds a further aesthetic layer to the words and music. Resembling a computer monitor readout, the letters are a blocky sans serif, and the vertical lines of some "E"s and "D"s are missing. The text scroll and soundscape undercut the epic score and top-down visuals of Earth, Luna, Mars, the Belt, Jupiter, and Saturn shown in the opening credits. Where the credits register the majestic promise of life in space, the text scroll signals the simmering conflict at the heart of solar system settlement.

By including "Worlds-Systems Theory," the title of this article plays with the idea of "world." It means, in Immanuel Wallerstein's sense, not "systems, economies, and empires of the (whole) world," but "the systems, economies, and empires that are a world" (16-17; emphasis in original). Additionally, it

gestures to the creation of sf storyworlds and world-building writ large. The Warwick Research Collective (WReC) combines these senses in their theory of “world-literature.” They provocatively suggest that the term “world-system” indicates “a bounded social universe—whose functioning is more or less (that is to say, relatively) autonomous, more or less integrated” (8). Moreover, they add that in these terms “world-systems” are not

coexistent with the “world” as such, and are hence not “global” or “globally dispersed” systems. The significant exception is the modern capitalist “world-system,” one of the indices of whose historical unprecedentedness consists precisely in the fact that it is a *world-system* that is also, uniquely and for the first time, a *world system*. (8)

Following from this distinction, in this essay we mean “solar system” in two important senses. We mean it in the sense one might expect: the *solar* system denotes the planets in orbit around the Sun. We also mean it here in a political-economic sense, as in *solar-system* analysis. In this way, we look to extend the work of Wallerstein and the WReC to science fiction and that of world-systems analysis to outer space.

The Arrighian model treats capital as a world-system that develops spatially and temporally at once. Largely theorized in *The Long Twentieth Century* (2010), Arrighi’s postulation is that historically capital has passed through four successive cycles of territorial expansion and financial declension with a central political power resting at the heart of each cycle. These overlapping cycles of accumulation, as he calls them, roughly correspond to long centuries of development: first Genoa (c. 1450-1640), then Holland (c. 1560-1780), then Britain (c. 1740-1920), and most recently the United States (c. 1880-present) have been hegemonic centers of capital accumulation (220). A steady rise in productivity (usually reliant on territorial expansion and the financial support of the declining hegemon) characterizes the start of each phase and the ascension of a new world power. Then, as production reaches a zenith, a flurry of expanding financial markets replaces it (the tulip crisis of the Dutch cycle being exemplary of this moment). This financial phase characterizes the decline of one hegemon and the rise of another, and in his later work Arrighi hypothesized China as the possible hegemon for a long twenty-first century. “Arrighi in Space” thus plays with the title of Arrighi’s *Adam Smith in Beijing* (2009), the follow-up to *The Long Twentieth Century*.

From the perspective of world-systems theory, the specter of pan-East-Asian orientalism haunts the speculative future of the series because Asia represents a real-world possibility for the center of twenty-first-century geopolitical activity. In *The Expanse*, the outer planets use New Yen for currency (the UN and MCR have their own currencies), security officers regularly order pan-East-Asian street fare in crowded marketplaces, and several scenes on Ceres Stations were filmed on location at Kinton Ramen—a popular spot on Queen Street in Toronto. Certainly, in the real world, China has taken a series of steps in recent years to compete for hegemony on the world stage, evident in a series of “pivots” to world markets in Africa, South

America, and the Middle-East. This latter move to invest in Iran's energy sector follows the controversial Iranian nuclear deal, and aims to secure Chinese influence in the geostrategic region as part of the Belt and Road Initiative, a development strategy that seeks to establish a transcontinental single market with China at its center. That Chinese jostles with English in faux-macaronic language in the series affirms our contention that contemporary real-world geopolitical tensions in the capitalist world-system structure the political unconscious of the series and not simply the abstract geopolitical models of world-systems theory as such.<sup>6</sup> It is important to note that Arrighi also argues that capital accumulation will eventually "reach a stage at which the crisis of overaccumulation cannot bring into existence an agency powerful enough to reconstitute the system on larger and more comprehensive foundations," and he suggests that "there are indeed signs that we may have entered such a stage" (*The Long Twentieth Century* 341). We share these suspicions. Whether or not Arrighi's intuition proves prescient, however, he did not take into account the limits to growth imposed by the Earth's climate system.

Decline is often characterized by a desperate form of future forecasting. As Imre Szeman puts it, "the effort in reading the tea leaves of contemporary capitalism is thus directed at determining when the current hegemonic formation will collapse and which new one (or ones) will come in its stead" (805-806). Szeman intervenes at a conceptual level. Rather than using a geographic-territorial hegemon to periodize capital, he asks: what if the heart of capital developments were taken to be the contemporary dominant form of energy? If this were the case, the long-nineteenth and long-twentieth centuries could be explained in a new manner:

steam capitalism in 1765 creates the conditions for the first great subsumption of agricultural labor into urban factories (a process of proletarianization that is only now coming to a completion), followed by the advent of oil capitalism in 1859 (with its discovery in Titusville, Pennsylvania), which enabled powerful and forceful new modalities of capitalist reproduction and expansion. (806)

Recent work on the coevolution of capitalist crisis and climate catastrophe, such as Andreas Malm's *Fossil Capital* (2016), demonstrates the efficacy of such reconsiderations. Malm argues that the development of fossil capital in nineteenth-century Britain stretches current understandings of historical temporality: one-hundred-and-fifty-year-old carbon emissions crash like a wave on the shores of the present (10). Indeed, "the capitalist world-system," as the WReC has also argued, "should also be understood as a world-ecology, in which the social transformations corresponding to different phases of capitalism are inextricable from the reorganisation of nature-society relations" (96).<sup>7</sup> A compounded effect, global warming establishes new conditions for the world-system and human habitability on Earth. *The Expanse* extrapolates its storyworld from such a real-world climate, and it shows that the extreme environmental conditions of space—no atmosphere to speak of, harsh

temperatures, rampant solar radiation—necessitate the construction of built environments for human solar-society relations.

*The Expanse* is as much a fictional projection of our own moment of ecological crisis as it is an extrapolation of the current world-system from the Earth to the planets and the asteroid belt. The credits show topologies of melting icecaps and the iconic view of the New York City skyline with the addition of massive walls that hold back the Hudson River, East River, and Upper New York Bay. In the way *The Expanse* constructs its storyworld, it hints that the future it offers extends our own world system beyond Earth's gravity well in order to move people off a warming world. It envisions one possibility for a future of accumulation beyond Earth's ecological limits: bringing capitalism to the stars.

The series imagines that new territories for expansion are unlocked through technological development. Thus, a stable fusion drive grants access to the expanded territory of the solar system. Though the first novel in the series, *Leviathan Wakes* (2011), explains the technological novum in its first paragraph, the television series delays introducing Solomon Epstein's invention to its second season.<sup>8</sup> The series plays out the invention of the Epstein drive through a series of flashback scenes across season two. The erstwhile inventor finds himself hurtling through space. A voice-control malfunction means that he cannot turn his drive off. So, as with the inertial drive toward catastrophic climate disaster, once his drive begins to propel his ship asymptotically toward the speed of light, the gravitational force is too strong for his reach to turn off the engine.

Connecting the dots from our own present, we imagine the drive inaugurating solar accumulation in the storyworld. (An earlier territorial drive would occur as Earth's habitability stretched ever thinner, nations formed a united world government, a base was formed on Luna, and a colony was founded on Mars.) Epstein, a Martian, invents a workable fusion drive, handing Mars the key to its freedom from Earth. Thus the Mars Congressional Republic (MCR) is born. With access to the Belt's mineral and ore deposits and the frozen water hurtling around Saturn, the solar system transforms from an ungraspable possibility to a resource-rich periphery. This is technoutopianism, to be sure, but it is one with reined-in expectations. All of this development transpires in the one-hundred-and-fifty-year lead-up to the series' present. Yet, from the opening scene, everything changes.

Following the credits and the situating text quoted above, the shot cuts to a close-up of Juliette Andromeda Mao (Clinton Shorter), the stand-in for "Dulcinea," Don Quixote's obsession. Mao, floating in zero gravity, hears gravity-booted footsteps rush past. Time elapses. She forces her way out of a holding cell. She makes her way through empty corridors. Her jumpsuit reads "SCOPULI." A bloody handprint on an airlock door comes into view. An empty suit floats past her. She reaches engineering, witnesses patterned motes of purple light float around the reactor, sees a figure reach out as it is sucked into a crystalline mass, and screams. The Scopuli has escaped Phoebe station carrying not only Mao, a Belter sympathizer and an Outer Planetary



Alliance (OPA) agent, but also biomatter of extra-solar origin called the protomolecule. In the first five minutes of the pilot, *The Expanse* situates its storyworld as one economically and environmentally related to our own, consistently presents a system of solar accumulation, and introduces a transformative force from beyond its solar-systemic boundaries that offers a new horizon for capitalist expansion.

**The Churn.** Julie Mao is the daughter of Protogen CEO Jules-Pierre Mao (François Chau), whose private company is named for its protomolecule research and development program. Protogen devises new technology and weaponry using the mysterious alien life form found on the ice-moon Pheobe. The discovery of this protomolecule—several years before the events of the series—introduces radical uncertainty into an already shaky solarpolitical arrangement of interplanetary accumulation.<sup>9</sup> This pivotal moment in the narrative timeline triggers a period of hegemonic unraveling and internecine conflict in the Solar worlds-system.

The series' entwined viewpoints and plotlines grant the viewer a totalizing impression of what comes to be known as “the churn.” Tasked with finding Julie Mao, Ceres-station detective Josephus Miller (Thomas Jane) uncovers a hidden struggle for power and profit. Miller becomes obsessed with tracing strands of conspiracy back to their sources. In the sixth episode, “Rock Bottom,” soon-to-be-ex-detective Miller correctly hypothesizes that “scientists on Phoebe discover[ed] something—something *big*—that would tip the balance of power.” The protomolecule is the radical element that precipitates what in episode seven, “Windmills,” Amos Burton (Wes Chatham) calls “the churn,” a transitional moment of solarpolitical restructuring “when the rules of the game change”; that is, “when the jungle tears itself down and builds itself into something new.” Meanwhile, Miller tracks down clues about Julie Mao's involvement with the OPA and the mysterious protomolecule as conflict blooms in the solar system and the delicate balance of power begins to tip.

In the figure of the churn looms what Arrighi calls “systemic chaos,” a “situation of total and apparently irremediable lack of organization” that “constitutes a recurrent condition of the modern interstate system” and features “both as a symptom of the breakdown of the system as instituted under one hegemony and as a key ingredient in the reconstitution of the system under a new hegemony” (80). Like the *clinamen* that animates the Lucretian cosmology of contagion—the “stochastic swerve of atoms” that “creates worlds and ends them” (8), as Angela Mitropoulos puts it—the encounter with the protomolecule sets off a chain reaction that ripples throughout the Solar worlds-system.<sup>10</sup> And yet the course this undulating current plots, upon reflection, is not dissimilar from the present trajectory of American decline (nor, for that matter, from the preceding British, Dutch, and Genoese secessions). If the churn names a process of transition, the question for both the series and the real-world present becomes *transition to what?*

Answering this question requires attending to the ways in which *The Expanse* also maps the limits of worlds-system expansion—attuned as the

series is not simply to the ebb and flow of *fortuna*, but to the cyclical rise and fall of powerful geopolitical formations—and limits proliferate in space. The mobility that the Epstein drive offers creates reduced and threatened life-worlds that radically restrict human capacities. Capitalist enclosure thus works differently in space: when no outside exists, one is always already enclosed. Of course, these are also the limits of Earth, not only as a gravity well but as a life-sustaining eco-system with relatively defined edges and borders, outside of which lies certain death without the right equipment. In this way, *The Expanse* naturalizes the logic of capital, making enclosure an inevitability—indeed, a prerequisite for life itself—but the limits to capital accumulation also appear throughout the series. The UN, for example, has implemented a Universal Basic Income (UBI) scheme to manage a vast surplus population in the core, while Belters work in the treacherous conditions of extreme environments for meagre wages in the periphery. In this fantasy of a closed system of accumulation, the further the system expands the more tightly sealed become its borders. The protomolecule thus offers the ability to transcend these equally economic and ecological limits and, as the UN, the MCR, and the Belt vie for position in the Solar worlds-system, the solarpolitical entity that harnesses its power might well become the hegemon of an intergalactic cycle of accumulation. The folding-into-itself of outsides has always been crucial to the expansion of capital accumulation, but in a moment in which capital appears to have reached global limits and now threatens the very viability of life on earth, representations of space travel offer speculative possibilities not only to a generation of sf enthusiasts, but also for an inflated financial sector frantically in search of an outlet for surplus liquidity.

Visions of the future multiply under conditions of systemic chaos. Competition intensifies during periods of crisis, and technological developments become projective fantasies of continuity and growth. In the twenty-third century, the Mormons have commissioned the *Nauvoo*—a generation ship of unprecedented size to be built by Belters—with the intention of settling a potentially habitable planet in a distant solar system. Each technological breakthrough that *The Expanse* imagines serves to extend the system of accumulation in leaps and bounds: terraforming makes life on Luna and then Mars possible, the Epstein drive reaches the outer planets, and the protomolecule promises an unprecedented era of technological development and territorial expansion beyond the Solar worlds-system. History thus advances in the series through the overcoming of limits. Indeed, the colonization of Luna, Mars, and the Outer Planets was first made possible by a massive economic effort on the part of nations on Earth that pooled resources to develop space-travel technology as the damage to Earth's ecosystem reached critical levels. Thus, in the terms of our argument, the protomolecule adjusts material conditions in a way that allows or enables the *possibility* of either a remodeling of the Solar worlds-system or the basis for a new round of extra-solar accumulation. But the desire for new beginnings

also generates political conflict, and progress proceeds through the multiplication of corpses.

When ships start blowing up and war involving the UN, the MCR, and the OPA seems imminent, control of the protomolecule promises an upper hand in the conflict. A state-centric approach to solar-political economy would seem to be in order here, and yet the three major players in the Solar worlds-system are almost entirely unaware of the developments taking place at Protogen, suggesting that capital, rather than any particular solarpolitical entity, leads the process of hegemonic transfer. Of course, elements within the Martian Congressional Republic and the United Nations compete clandestinely for a contract with Protogen, and later the OPA tries to get its hands on the protomolecule. Yet it is Protogen, and not the other players, that accelerates protomolecule research and development through cloak-and-dagger means, bypassing conventional scientific ethics to achieve results. Protogen's techno-scientific interests encompass secret space laboratories and state-of-the-art stealth ships that belong neither to the UN nor to the MCR. Their efforts to unlock the potential of the protomolecule and discover its secrets include administering a medical procedure to their technicians that diminishes their capacity for moral or ethical thought, and a large-scale biological experiment in which they expose the entire population of Eros station to the protomolecule, killing a million and a half Belters.

The scientific dimension of the series thus arrives in the form of its realism, in its emphasis on the material limits—both economic and ecological—to growth and development, while its fictional component derives from a speculative fantasy of endless expansion, the boundless logic of capital accumulation in which technology appears to develop autonomously, propelling humanity ever forward in the great and marvelous march of progress. Thus, in bracketing Lucretius above, we may, in our haste to emphasize the familiar elements of hegemonic decline, cede too much to the Arrighian schema. This is the case not simply because the very question of what the next cycle of accumulation might look like is a symptom of Arrighi's model, but also because that model has failed to reproduce itself in the present. In the current moment of US decline, many world-systems theorists have expressed a profound uncertainty about the prospects for further expansion of the global economy.<sup>11</sup>

In an era of austerity and stagnant economic growth, space travel seems a distant fairytale. Apart from a brief increase in the 1990s, NASA budgets have been in freefall since the mid-1960s, a trajectory coterminous with what Robert Brenner calls the "fall in profitability and the turn from boom to crisis (1965–73), and the long downturn (1973–present)" (8–9). In the private sector, things look slightly better: as with the fictional Protogen CEO, real-life business magnate Elon Musk has plans to take humanity to the stars. Musk dreams of colonizing Mars and has recently built the world's largest lithium-ion battery in an effort to both satisfy rising energy needs and curb global warming. But Tesla is reportedly running out of money fast, leading some financial commentators to speculate that the company is approaching terminal

decline.<sup>12</sup> The development of solar-systemic space will not resolve the contradictions at the heart of contemporary economic stagnation, nor will such expansion reduce the terrestrial ecological costs of rising energy demands.

**“Remember the Cant.”** In the series pilot, the five crewmembers sent to discover the source of a distress signal survive by chance in *The Canterbury*’s shuttle, *Knight*, and bear witness to the destruction of their ship. This event—like the discovery of the protomolecule—reverberates across the Solar worlds-system. It impacts not only the venture capitalists, such as Protogen CEO Mao whose secret is unravelling, and savvy UN politicians practicing *realpolitik*, such as Chrisjen Avasarala (Shohreh Aghdashloo) who works behind the scenes to uncover the shrouded player behind the attack, but crucially the Belters, who rely on timely water shipments. Meanwhile, on Ceres Station, the news of *The Canterbury*’s destruction fuels Miller’s suspicion that there is more to his assignment than simply bringing in the runaway daughter of a Solar billionaire. He becomes obsessed with connecting Julie Mao’s disappearance to the events unfolding out in the system even as the station begins rising up in revolt around him.

“Remember the Cant” becomes the rallying cry to foment the Belter uprising. The disruption in supply chains provides the narrative an opportunity to map the Solar worlds-system as the *Knight* seeks safe harbor and Miller sleuths after the truth. In calling attention to such character-focalized conflicts, our goal has not been to identify the state of mind of those living through the turbulent distortions of the combined and uneven decline of the world(s)-system. Instead, we have aimed to unravel the origins and mediations of real-world distortions presented in *The Expanse*. Entwined plots fill the foreground of the series, yet they provide the occasion to look past them. To get a better sense of the background of the Solar worlds-system, we conclude by turning to the source of resistance in the series: the Belters themselves and their anti-colonial, anarcho-syndicalist organization, the OPA.

Named for being born in the asteroid belt, Belters form a diaspora. They are a population with a common geographical origin now scattered across the outer planets of the Solar worlds-system. They are racialized as well, even as the representation of new modes of racialization sits in problematic relationship to the series’ erasure of real-world contemporary instances of racialization. Belters speak a Creole and share distinct phenotypical attributes that result from living their entire lives in low gravity conditions—tall, thin bodies with long, fragile bones.<sup>13</sup> As one Belter and suspected OPA operative says under duress at a UN high-G (read Earth-gravity) torture site, “Earth has created a race of exiles out in space who have no homes to return to.” Wage laborers forced to the edges of the Solar system, Belters also form a working class. Unlike the vast surplus population on Earth that scrapes by on UBI and barter, Belters rely for their social reproduction on employment in extractive zones in this interplanetary form of combined and uneven development. Their precarious access to the wage notwithstanding, Belters also struggle over access to the physical and biological means of reproduction, such as air and

water. When the attack on the *Canterbury* threatens water supplies on Ceres, riots erupt. In “Back to the Butcher,” episode five, news broadcasters report “anti-colonial outrage” in the “impoverished” Medina area of Ceres station, where security forces clash with “Belter extremists.” These “extremists” are the OPA.

The OPA started out as a labor union and advocacy group at a time when the Earth-Mars Coalition imposed heavy tariffs on the Belt. A small increase in taxes would result in increased rationing or even death. Since then, the OPA has grown and now encompasses a vast network of loosely affiliated cells and movements stretching from the outer planets to the Far Horizons Foundation (a student-activist group on Earth that counted Julie Mao among its members during her time in college). Their primary aims, while varied, tend to orbit Belter self-determination, bringing them into constant conflict with the UN and the MCR. Actions by the group include the withholding of labor, the sabotage of transport vessels, and attempted assassinations of leading officials at the UN. The inner planets label the OPA a terrorist organization. Its insignia resembles the anarchist circle-A, but the OPA is clearly a conglomerate of nineteenth- and twentieth-century predecessors, incorporating elements of insurrectionary anarchism, workerism, and anti-colonial movements. Although they are not an environmental movement as such, their struggle for unmediated access to resources in space makes them a movement for habitable environments. In “Back to the Butcher,” OPA leader Anderson Dawes (Jarred Harris) talks of his plans to seize what he calls “the grids,” which deliver air, water, and power, “the very lifeblood of the station.” The OPA derives its content from twentieth-century forms of antagonism, but its political horizon takes shape under conditions prefigured in the growing climate crisis of the twenty-first century, as resource scarcity threatens peripheral populations in the global South.

*The Expanse* extends the crisis trajectories of the contemporary world-system. The development of a Solar worlds-system features intensified immiseration and new forms of enclosure—from water rations to air pumped through spacestation recyclers. With these elements, the series reflects and inverts ecological limits on contemporary political possibilities. The political horizon of the OPA envisions a communal form of life, conceptualized in ecological terms that are simultaneously political and economic. If worlds-systems and cycles of accumulation form the political unconscious of *The Expanse*, then the political agents in the series such as the OPA figure as necessary features of a crisis-prone system of interplanetary combined and uneven development that requires there be winners and losers. Indeed, the series extrapolates from the present moment of American decline to render a composite image of the global dispossessed in the figures of the Belters who work in extractive industries and in the circulation of goods while production proceeds through automation and is overseen by technocrats. In this way, the series suggests that more accumulation is never the answer to crisis; equally, there is no technological fix to the property relations that accumulation requires. Whether it is the real-world climate crisis or the fictional Belter

uprising of the series, the only way out of the quagmire is collective politics that are fundamentally at odds with the property relations of capital accumulation.

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#### NOTES

1. The series is adapted from best-selling novels written by Daniel Abraham and Ty Franck under the *nom-de-plume* James S.A. Corey.

2. Winter describes the subgenre in these terms: “New Space Opera intricately constructs psychologically complex, unsympathetic protagonists, sophisticated economic and social analyses, information overload appropriate to a world saturated by digital and electronic technologies, more or less believable technoscience, the display of virtuosic literary techniques, and an obsession with interstellar culture clash” (3). See also Luckhurst, *Science Fiction*.

3. Given more room we would want to position *The Expanse* in relation to Michael Szalay’s excellent analysis of the function of Time Warner brand equity in popular HBO miniseries, which he argues operate for their corporate owners in a manner akin to the derivative, so that we might explore the extent to which this insight might apply to a show like *The Expanse* that is devoid of the particular brand equity of HBO/Time Warner yet submersed in the aesthetics of prestige television.

4. For additional sources that thread sf criticism and world-system analysis, see Milner, *Locating Science Fiction* and “World System Theory and World Science Fiction”; Rosenberg and Rusert, “Framing Finance”; and Shapiro, “Transvaal, Transylvania.”

5. Enclosure names the historical separation of the peasantry from the land through the legal implementation of fences, titles, and deeds, delivering the commons to private ownership and setting workers “free” to sell their labor on the open market.

6. While the world-building efforts of the series traffic in the notion suggested by Arrighi and such common-sense sources as *The Economist* that China will rise to be the next hegemon of the capitalist world-system, pan-East-Asian orientalism has featured as a kind of cultural fixation in speculative fiction’s representation of future societies and their languages since Japan and then the “Asian Tigers” (Hong Kong, Singapore, South Korea, and Taiwan) underwent a rapid cycle of capitalist modernization and development in the latter half of the twentieth century. This generic trait has been especially common to cyberpunk, appearing in classics such as *Blade Runner* and *Neuromancer* (1984), but it also features in the tv space *Western Firefly* (2002-2003), as well as in Neal Stephenson’s posthuman bildungsroman *The Diamond Age* (1995).

7. See also Moore, *Capitalism in the Web of Life*.

8. “A hundred and fifty years before, when the parochial disagreement between Earth and Mars had been on the verge of war, the Belt had been a far horizon of tremendous mineral wealth beyond visible reach, and the outer planets had been beyond even the most unrealistic corporate dream. Then Solomon Epstein had built his little modified fusion drive, popped it on the back of his three-man yacht, and turned it on. With a good scope, you could still see his ship going at a marginal percentage of the speed of light, heading out into the big empty. The best, longest funeral in the

history of mankind. Fortunately, he'd left the plans on his home computer. The Epstein Drive hadn't given humanity the stars, but it had delivered the planets" (7).

9. The discovery of alien technology has many precedents. Winter lists *The Expanse* among other titles that date back to the monolith in Stanley Kubrick's film *2001: A Space Odyssey* (1968) as he explains that space opera often explores the "consequences of rediscovered xeno-technology" (1).

10. In *Contract & Contagion*, Mitropoulos argues that, for Lucretius, the concept of the *clinamen* functions to explain both the unpredictable swerve of the atom and "the story of the fall of the Athenian Empire" (8). Crucially, in Lucretius's account, there is "no necessary re-foundation of the polis," as Mitropoulos notes (8). Arrighi's model, in contrast, assumes capital will always overcome the limits it encounters to bounce back stronger than it was before, despite Arrighi's own reservations about the world-system's capacity for further expansion. For further discussion of the Lucretian concept of the *clinamen* in Mitropoulos's work, see Sean O'Brien, "Border, Theory, Contract: An Interview with Angela Mitropoulos."

11. For a critique of the notion that industrial development in the BRICS (Brazil, Russia, India, China, and South Africa) might usher in a new cycle of material growth in the global economy, see Clover and Benanav, "Can Dialectics Break BRICS?". See also Immanuel Wallerstein's "Globalization or the Age of Transition?", in which the leading world-systems theorist argues that "the capitalist world economy has now entered its terminal crisis" (265).

12. See Sonali and Hopf.

13. As Denise Ferreira Da Silva notes, early nineteenth-century pseudosciences produced racial difference using body and place of origin such that physical characteristics and geographical space were linked discursively and epistemologically to notions of European superiority, and it is this same racializing logic that constitutes the Belters, with their distinct physical appearance, as a diasporic "race" of Earth's descendants scraping a living in a distant archipelago. See Da Silva's "Towards a Critique of the Socio-logos of Justice."

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#### ABSTRACT

The Syfy television series *The Expanse* (2015-) transposes a form of combined and uneven development from Earth to the solar system, making the human reality of life lived in space a central concern. *The Expanse* envisions a colonized solar system, replete with a United-Nations-controlled Terra and Luna, a military dictatorship on Mars, and a densely populated asteroid belt. This essay proposes that *The Expanse* offers an image of a *worlds-system*, by which we mean an interplanetary system of capital accumulation that reproduces the structure of twentieth-century geopolitical-economy at the level of the solar system. At one and the same time, *The Expanse* imagines a new cycle of accumulation founded in the planetary system and premised on ecological crisis on Earth *and* it provides a re-narration of the end of the cycle of accumulation that has been called the long twentieth century or the American century, which exasperated the climate crisis in the first instance. *The Expanse* is a pivotal narrative that promises a new interplanetary cycle of accumulation and its decline all at once, a fantasy of continuity that simultaneously dramatizes the contemporary crisis of futurity.