Malthus at the Movies: Science, Cinema, and Activism around *Z.P.G.* and *Soylent Green*

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Abstract

This essay investigates cinema's engagement with the neo-Malthusian movement to control global overpopulation in the long 1960s. It examines the contested production and reception of *Z.P.G.: Zero Population Growth* (Michael Campus, 1972) and *Soylent Green* (Richard Fleischer, 1973) to shed new light on the nexus of science, activism, and the media. It argues that the history of the movement, usually reconstructed as an elite scientific and political discourse, cannot be fully understood without also taking into account mass-market entertainment.

Keywords: counterculture; environmentalism; film history; overpopulation; reproduction; science fiction

The Science-Activism-Media Nexus

In the early 1970s, two Hollywood films portrayed the coming millennium as desperately overcrowded and polluted, fast running out of resources and space. Both *Z.P.G.: Zero Population Growth* (Michael Campus, 1972) and *Soylent Green* (Richard Fleischer, 1973) were products of the "Malthusian moment," a brief peak in the late 1960s and early 1970s of environmental concerns with world population growth and its control,[1] but they also differed in significant ways. *Z.P.G.* imagined a totalitarian state that banned childbirth on penalty of death, fared as poorly at the box office as with critics, and became embroiled in a major fracas with the grassroots organization Zero Population Growth (ZPG). *Soylent Green* envisioned a powerful corporation that perpetuated mass cannibalism, performed well at the box office, and generally satisfied activists as a politically neutered, though passably ecological "message" film.

Though neo-Malthusian environmentalism was as much about birth control as the biosphere, scholars have generally framed both films in terms less of reproductive politics, than of environmentalism.[2] As early as 1978, Joan Dean's influential essay on science fiction cinema between *2001: A Space Odyssey* (Stanley Kubrick, 1968) and *Star Wars* (George Lucas, 1977) established *Z.P.G.* and *Soylent Green* as part of a Hollywood cycle of decidedly terrestrial and often ecologically themed dystopian films.[3] Overcrowding and resource depletion, the story goes, became central to Hollywood as nuclear fears temporarily subsided and were largely

displaced by new anxieties—around Watergate, Vietnam and the oil crisis.[4] Now widely regarded as the first film to explicitly mention the "greenhouse effect," *Soylent Green* has subsequently been embraced both within and beyond the academy as a prescient cautionary tale.[5] Meanwhile, renewed historical interest in the Malthusian moment has linked *Z.P.G.* to the environmental movement and the goal of "zero population growth."[6]

Histories of the "neo-Malthusian" movement to control world population tend to privilege the somewhat rarified intellectual discourses of scientific and political elites. These discourses can become disconnected from public perception. If mentioned at all, film and fiction receive little more than passing commentary.[7] This is a major oversight for the analysis of a movement that was fundamentally about reaching a large proportion of the world's population. However, good models of approach are to be found in adjacent fields. Environmental historians have begun to take seriously the power of widely circulated iconic images,[8] while historians of medicine continue to investigate the birth control and sex education films that were projected not only in cinemas, but also in schools, clinics, barracks, and mobile vans.[9] The "sexual revolution" of the late 1960s and early 1970s has been reassessed as a "media revolution,"[10] and there has also been a move to highlight the importance of taking communication seriously in the long-term history of reproduction.[11] Science, activism, and the moving image are starting to come together in recent accounts by film historians of the anti-nuclear movement's engagement with nuclear-disaster cinema and television.[12]

Taking cinema as the example, in this article we investigate the science-activism-media nexus in the case of neo-Malthusian thinking about global population and its control in the early 1970s. Crucially, film and fiction are not just read-outs of

elite scientific and political discourses, but produced, from screenplay to screening, through negotiation and contestation. Historians of the science and politics of population should take the challenges and ironies of using fiction seriously. They are an essential part of the story. As we shall see, ZPG fought back against *Z.P.G.* and the explicitly anti-Catholic, pro-contraception message of the book adapted for *Soylent Green* was lost in the production process. But first, we take a step back to consider more broadly how neo-Malthusians engaged with different genres and forms of mass communication in the "long 1960s."

Neo-Malthusians and Mass Communication in the Long 1960s

The "long 1960s," a politically tumultuous period from the mid-1950s to the mid-1970s, was marked by a deepening crisis in scientific authority.[13] It also saw a confluence of science fiction's expository techniques and ecology's concern with the near, extrapolated future.[14] Not only did professional science fiction writers forecast ecological doom, but prominent ecologists also fictionalized their own predictions. Take Rachel Carson's *Silent Spring* (1962) and Paul Ehrlich's *The Population Bomb* (1968), the two most influential books of American environmentalism.[15] *Silent Spring*, above all concerned with the effect of pesticides on birds, contributed to the ban on DDT a decade after publication. But from a literary perspective, its enduring success is today partly attributed to Carson's affective blend of science fact and fiction, especially in her book's evocative preface, "A Fable for Tomorrow."[16] At the time, however, Carson's rhetorical strategy left her vulnerable to attack. Agricultural scientists dismissed *Silent Spring* as "merely science fiction instead of fact,"[17] "to be read in the same way that the TV show *Twilight Zone* is to be watched."[18] Experts

openly disagreed over the data and Carson, a marine biologist by training, risked undermining her own scientific authority by penning evocative, fictionalized prose.

Ehrlich's bestseller was published in paperback by the Sierra Club, a well-established environmental group, in partnership with Ballantine Books, known for publishing politically engaged science fiction alongside serious nonfiction dealing with social issues including contraception, nuclear energy, and the environment.[19] A butterfly ecologist with no formal training in demography, Ehrlich too invited criticism by presenting readers of *The Population Bomb* with not one, but three "doomsday scenarios" variously combining mass famine, plague, and nuclear war.[20] Indeed, Paul and his wife Anne Ehrlich later claimed that the "biggest tactical error in *The Bomb* was the use of scenarios, stories designed to help one think about the future."[21] But as others have noted, it was the book's "tragic apocalyptic inflection" that "produced both its phenomenal success and enduring scandal."[22]

The mobilization of science fiction was part of a broader strategy widely adopted not only by individual authors, but also by organizations such as ZPG. Cofounded by Ehrlich in 1968, the same year *The Population Bomb* was published, ZPG was headquartered in Palo Alto, California, where Ehrlich taught at Stanford.[23] In the years around 1970, the charismatic professor effectively used his many appearances on Johnny Carson's *The Tonight Show* to promote both his book and the organization. By 1971, ZPG had grown to 35,000 members in more than 400 local and state chapters, mainly in the academic corridors of the Northeast and countercultural California.[24] A major political lobbying force with catchy slogans including "Stop Heir Pollution" and "Make Love, Not Babies," ZPG distributed newsletters and organized letter-writing campaigns.[25] It also edited and supported the

publication of an anthology of science fiction short stories devoted to overpopulation, *Voyages: Scenarios for a Ship Called Earth* (1971).[26]

Also published by Ballantine and showcasing such luminaries as J. G. Ballard, Ray Bradbury, and Doris Lessing, *Voyages* contained a comprehensive paratext: the Ehrlichs provided the introduction; a sample letter was included at the back to promote activism; and didactic introductory material and scholarly bibliographies framed each section. ZPG not only invited readers to take the dystopian futures imagined in *Voyages* as seriously as demographers' forecasts,[27] but even published an essay concerning strategies for promoting the book and its message. "Using *Voyages*" invited its ZPG members to do more: "This book is a good book. But it is also a tool—a tool for ZPG. But a spade never dug the garden by itself."[28] ZPG members were to confirm the book's availability in shops and assure it was displayed prominently; then ("for the brazen") they could forge the anthologist's signature in the local copies of the book; and finally, they were encouraged to "Write a book review. Get one written. Get one published."[29] But the printed word could only go so far, so zero populationists also set their sights on the moving image.

As the 1960s wore on, activists increasingly turned to underground filmmaking as a means of documenting the anticipated revolution, and Hollywood began appropriating countercultural sensibilities.[30] Network television, on the other hand, proved somewhat more recalcitrant and comparatively less amenable to subversion.[31] Some members of ZPG went beyond critiquing television's conservative status quo to re-imagine what televisual culture might look like if they were in control.[32] For example, in "Towards New Images," her essay for the February 1972 issue of the *ZPG National Reporter*, Ellen Peck lamented that daytime television's "birth rate" rivalled "that of Latin America!"[33] Peck, who was

also a leading advocate of the "childfree" movement, singled out an advertisement for Pampers diapers in which "several children stand over a crib and discuss Pampers, [and] one child comments, 'I'm going to tell my mommy I want a new baby brother, too.'" She argued that the product on offer was not diapers, but rather children, and rewrote the commercial as follows:

> Unobjectionable Pampers Commercial (30 sec.)
> Girl: Hello, I'm Judy Singer. I'm president of my town's chapter of Zero Population Growth. For our country's sake—and for our children's sake—I hope you won't have more than two children. If there should be a new baby at your house, though, I'd like to suggest you try new recycled-paper Pampers, because (shows Pampers) they have an outer absorbent layer that keeps babies dryer.[34]

Peck's fantasy rewrite gives us a sense of ZPG's stake in not only the fate of the biosphere, but also that of women's reproductive bodies and the reproductive narratives purveyed on screen. In reality, ZPG was unable to exert any control over the content of television, but, as with other contemporaneous groups, it was able to make movies. Indeed, the organization's most successful and enduring educational tool was *World Population!* (1973), a short animated film that dramatically projected historical population growth as dots on a world map multiplying to the ominously accelerating and loudening rhythm of a human heartbeat. Though not the first film to thematize overpopulation, it was one of the most viewed; an updated "Millennium edition" is still widely available online.

In the decade leading up to the publication of *The Population Bomb* and the creation of ZPG in 1968, a range of non-fiction films and television broadcasts engaged with population. Millions had viewed CBS Reports' Emmy-award winning "The Population Explosion," a television documentary about India, in 1959.[35] Canada's National Film Board produced *People by the Billions* (1960) and *Population Explosion* (1967), while the Ford Foundation's National Educational Television (NET, later replaced by PBS) broadcast a six-part series on *The Population Problem* in 1965. *The Squeeze* (1964), a short experimental film about overpopulation by time-lapse pioneer Hilary Harris, won a Golden Gate Award for best fiction at the San Francisco Film Festival. And most famously, the Population Council commissioned Walt Disney's *Family Planning* (1967).[36] Translated into over twenty languages, the ten-minute cartoon starring Donald Duck cost $300,000 to produce and was accompanied by supplementary filmstrips, slides, leaflets, comics, posters, and other materials.[37]

In roughly the same period, fictionalized narratives about overpopulation and population control also flourished. A thriving subgenre of science fiction, subsequently dubbed demographic-dystopian, or "demodystopian," was not only published in paperback, but also broadcast on radio and television.[38] Following Malthusian episodes of radio's *Exploring Tomorrow* (1958) and television's *ABC Stage 67* (1966) and *Star Trek* (1969), *ABC Movie of the Week* aired "The Last Child" on October 5, 1971, just three months before *Z.P.G.* opened nationwide.[39] Set in New York "sometime in the not too distant future," the made-for-TV movie follows a young couple's attempt to save their unborn child from state-administered abortion by fleeing the overpopulated police state America has become to Canada, where population control laws are more lenient.[40] The narrative structure of defiantly

reproductive heroes on the run from draconian authorities as well as the conservative (pro-family, anti-abortion) subtext of "The Last Child" was soon echoed in *Z.P.G.*, the first demodystopian film to be seen not on television, in the privacy of homes, but in cinemas across the nation. The name of the film, identical to that of Ehrlich's organization, brought ZPG into direct conflict with *Z.P.G.*

ZPG vs. *Z.P.G.*: Activists Challenge a "Message" Film

In contrast to the typically private or family-oriented experience of television viewing, going to the movies is a public activity with a long and turbulent history of political protest, often against particularly controversial films, directors, or genres.[41] Though thematically very similar to *The Last Child*, *Z.P.G.* uniquely attracted the attention of leading activists for two main reasons. First, its theatrical release created the space for a direct, public confrontation that television lacked. Second, and more importantly, the identical name guaranteed that Ehrlich's organization would take notice.[42] Indeed, the filmmakers may have been strategically trying to trade on the growing public awareness of the term "zero population growth," which had recently appeared on the cover of *Life* magazine.[43]

The film began not as *Z.P.G.*, but as *The First of January*, an original screenplay by Max Ehrlich (no relation to Paul) and Frank De Felitta.[44] In 1971, the screenplay was made into *Z.P.G.*, a film by first-time director Michael Campus, and simultaneously adapted into *The Edict*, a novelization by Ehrlich. Published as a film tie-in paperback by Bantam and in hardcover for Nelson Doubleday's Science Fiction Book Club, *The Edict* was ominously (and reproductively) dedicated

To our children. . .

And their children. . .

And their children's children.

If any.

Though distributed by Paramount, *Z.P.G.* was bankrolled by Edgar Miles Bronfman, an heir to the fortunes made by his father's distillery empire during America's era of prohibition.[45] After briefly serving as MGM's chairman, this wealthy businessman and philanthropist founded Sagittarius Productions "to make movies for domestic television and foreign theatrical release."[46] Filmed cheaply in Copenhagen, Denmark, by a mainly Danish crew supervised by English technicians,[47] *Z.P.G.* starred Geraldine Chaplin—daughter of Charlie Chaplin and Oona O'Neill—and Oliver Reed, the highly regarded actor who by this time was a notorious alcoholic, taking films indiscriminately "to pay the bills for Broome Hall," his extravagant mansion in Surrey.[48]

In the winter of 1971, freelance journalist Fradley Garner interviewed Campus in Denmark for *Ecology Today*, a recently launched monthly magazine out of Connecticut.[49] Garner's summary of the plot carried consistently to the final version:

> It is the year 2000, somewhere on this planet. Deaths are clicking off sluggishly. War and disease no longer maintain an ecological balance. World population is increasing at a staggering rate. The crisis is clear and imminent. In a massive conference room, the world leaders assemble to deal with the nightmare of overpopulation. After furious argument, they return to their own

> countries to issue the decree: As of the First of January no children may be born for 30 years. The penalty for having a child is death.
>
> The world is plunged into gloom but adjusts swiftly. Babies then in hospitals everywhere are stamped with a sign on their foreheads ["BE": Before Edict] to show they were conceived or born before the deadly decree.
>
> Dolls are sold to women as substitutes for children. The dolls are computerized to make them lifelike. Women are programmed by the State to accept the dolls as their own flesh and blood.
>
> Some women cannot make the adjustment. Carole McNeil (Geraldine Chaplin) resists [with] her husband Russ (Oliver Reed)[.] She decides to have a child, to risk death to keep the cycle of human life going.

The crucial turning point, not mentioned by Garner, comes when Carole decides not to go through with a routine post-coital "electronic abortion," but instead opts for pregnancy in direct defiance of the edict (Figure 1). The summary continues:

> Throughout her pregnancy Carole wanders about her bewildering world, until the day she moves into an abandoned civil defense bomb shelter in the basement of their home to await the birth of their child.
>
> [The neighbors become aware of the child and jealously report Carole to the authorities. She and her family must flee] under the city through a labyrinth of tunnels, to the open sea, now a polluted disaster, and cross it in search of a new world. They are cast ashore on an island [. . .] not knowing if they will live or die.[50]

Garner then cautions that the reader can "Shrug it off as so much celluloid sci-fi, if you want. But then you pretty well have to dismiss biologist Paul R. Ehrlich's book [. . .] and ignore the considered opinions of other scientists who checked every turn of the script."[51]

[[Figure 1 about here.]]

Figure 1. Consecutive screen shots of the crucial scene in *Z.P.G*. (Paramount, 1972). The "electronic aborting device," the novelization explains, "resembled somewhat a set of scales used in doctors' offices during the last century, but this had a curved plate that fitted the contours of a woman's abdominal area. A few decades ago it had replaced the Pill, since by using it there wasn't the remotest possibility of any unpleasant side effects. Carole looked at the apparatus for a moment, hesitating, hating the necessity but resigning herself to it. She inserted her body snugly into the curved receptacle and reached out for the control switch." See Ehrlich, *The Edict*, 68.

Regularly citing *The Population Bomb* as his inspiration,[52] Campus's own appeal to scientific authority was complete, ranging from repeatedly suggesting that *Z.P.G.* "is not science fiction, it is science fact,"[53] to his exaggerated claims that a team of scientists from New York, Los Angeles, and Copenhagen had determined that a U.N. edict against childbearing was the most plausible outcome of overpopulation. (Leading Danish demographer Poul Christian Matthiessen is uniquely credited as technical adviser.[54]) At first activists welcomed Campus's interest in directing a film about overpopulation,[55] but support began to waver after a

special advance screening was provided for the upper levels of ZPG's leadership, including Paul Ehrlich.

On February 8, 1972, a "Special Report" on *Z.P.G.* was issued as part of the "ZPG Fortnightly Report," a newsletter distributed among chapter heads. At this stage, the film was seen as "basically positive" so long as "a prologue and/or epilogue can be added to set the picture in a positive context"; and so long as ZPG could receive 5% of the film's earnings for use of the name (estimated before release to equal minimally, $115,000, or almost three-quarters of a million dollars today; this assumes that the film would be a success at the box office).[56] Paul and Anne Ehrlich met with Campus to discuss these issues and to see about offering an "endorsement" of the film.[57] ZPG's initial interest in *Z.P.G.* had as much to do with marketing and fund raising (a basic necessity of all grassroots organizations) as with getting their message out there.

Though cautiously optimistic that Campus had "sincerely tried to make a film that will present the urgency of population stabilization to a mass of unconcerned apathetic citizens,"[58] *Z.P.G.* also subtly threatened to undermine ZPG's previously unchallenged sense of ownership over the use and meaning of "zero population growth." Higher-ups fretted: "If we threaten a lawsuit to block use of the ZPG name Paramount may just change the name back to 'The First of January' or 'The Edict,' the two previous names and carry on without us."[59] Worse, "they might also fight the lawsuit and win, proving 'ZPG' is public domain."[60] *Z.P.G.* occupied the activities of the main, Palo Alto, branch of ZPG for several months. An epilogue was scripted, submitted to Paramount, and subsequently rejected for length. Despite repeated pleas, Paramount refused to negotiate over a ZPG-scripted supplement. ZPG then filed suit against the corporation for royalties and over the use of their name, but the

Superior Court of San Francisco rejected the suit, noting that "zero population growth" was a concept and demographic goal before it was an advocacy group.

In mid-February, ZPG leaders finally admitted they had no control over the content or name of Campus's poisoned chalice and changed tactics. Going on "crisis alert," they "urgently" requested the "assistance" of rank-and-file members "to help save our name from gross misuse."[61] In practice, this meant getting ZPG's "side of the story to *every film critic* in the country" (original emphasis) in order to turn "what will already be a poor review [. . .] into an utterly damaging one."[62] From ZPG's perspective, the main sticking point was the gross mismatch between the method of population control officially endorsed by Ehrlich's group, on the one hand, and that portrayed in Campus's film, on the other. Whereas ZPG officially advocated "personal responsibility for voluntarily restricting child birth," *Z.P.G.* confronted audiences with "government decrees enforced by pain of death." Understandably, ZPG leaders worried that any association with *Z.P.G.* would be "very damaging to our image."[63]

Indeed, *Z.P.G.* did muddy the waters of ZPG's message. Upon its release in San Francisco, ZPG members canvassed audiences before and after a screening, having viewers fill out a survey to assess the extent of the confusion caused by the film's plot and title. Volunteers asked the following question (among others), recording the number of cinemagoers who answered the question, "What does the concept of 'zero population growth' mean to you?" The results were not reassuring (Table 1).[64]

[[Table 1 about here.]]

As we can see, the ratio of people who ticked the "correct" information about the organization's goals—that people should have no more than two children—fell from around three quarters to just one third, shifting to the idea that "zero population growth" as a concept means that "people should have no children at all" (as suggested in the film). Alternately, viewers were no longer sure what "zero population growth" meant. Realizing the extent of its public relations trouble, ZPG mobilized. Members were asked to send protest letters to the presidents of Paramount and Gulf & Western (the conglomerate that owned Paramount until 1994) and the embattled organization sent press releases to "all of the nation's movie critics," petitioned newspapers to boycott advertisements for the film, published a list of venues planning to screen the film, and held rallies at some of the more than 115 cinemas at which the film opened (Figure 2).[65]

[[Figure 2 about here.]]

Figure 2. Accompanying the paradoxical tag line—"The time is tomorrow and there's no time left"—the poster for *Z.P.G.* (Paramount, 1972) includes a cluster of vignettes from the film. Against a backdrop of a crowded planet, the bell-bottomed protagonists resist apprehension by a giant dome; a living child is being pointed to, while a robot child is thrown; above, drones circle. These images are a visual précis of the film. Authors' collection.

As it happened, ZPG's campaign targeted a film that fared as poorly at the box office as with critics. Film industry barometer *Variety* magazine appended a note about the debacle to their negative review: "A genuinely serious topic is handled so

poorly that real-life orgs concerned with population growth are openly debunking it."[66] Other media sources focused on the confusion over the title and the lawsuit surrounding it. The *Los Angeles Herald-Examiner* ran the headline, "'ZPG' Film Title Hit By Protest."[67] And *Box Office* wryly commented: "With the new PG rating attached to it, Paramount's 'Z.P.G.' (not to be confused with Columbia's 'X, Y & Zee' [a contemporaneous Elizabeth Taylor picture]) is bound to instigate puns and some amount of confusion."[68]

When the film opened at the Astoria in London, England, medical journalist Donald Gould advised "serious minded" readers of *New Scientist*, a magazine he had previously edited, to make a donation to Oxfam instead of spending their money on the "appalling imitation of a melodrama."[69] Everywhere, negative reviews used reproductive metaphors against the film. *Cue: The Weekly Magazine of New York Life* was the most direct, stating plainly: "The film is a miscarriage."[70] Beyond the film's focus on the issue of birth, Campus may have invited this trope during his press tour by often comparing the film to his progeny: "The picture is my child. I have given birth to it. If the eyes are too close together; its nose too bent and it makes too much noise. I am sorry. I hope people will look past its bleamishes [*sic*] and get into what I am trying to say."[71]

The underwhelming response must have come as a relief to ZPG. But despite its commercial and critical failure, the film had precipitated a public image crisis. "What's in a name?" asked ZPG in their fortnightly report to the board of directors:

> There is a steady trickle of letters coming in recommending that we abandon the ZPG name and choose something more positive. Since the advent of the movie that trickle has notably increased. I think the suggestion has merit and

> deserves some thought from all of you. It is the kind of decision that needs at least six months to implement. Some people are weary of being called zero populationists.[72]

Professor Wendy Hearst of New York University wrote to ZPG in April of 1972, "Dear people, oh, I was up yesterday at a demonstration at the Gulf and Western Building in New York, protesting the Paramount movie titled you know what. When I came away, I began to give some thought to the current situation, and ended up absolutely furious at the organization."[73] She went on to request that ZPG change its name.

The organization eventually did change its name, to Population Connection, "America's voice of population stabilization," but not until 2002.[74] The film, meanwhile, continued to attract ridicule, not least for its misleading title,[75] and gradually fell into obscurity, "unclaimed, unloved and abandoned, even by genre fans."[76] Though today largely dismissed as a forgettable "B" movie, *Z.P.G.* constituted a major challenge, perhaps the major challenge, to ZPG in the early 1970s. In the next section we turn to *Soylent Green*, an enigmatically titled and politically watered-down film that did not become embroiled in any such fracas. And yet, as we shall see, it was no less an object of contestation and negotiation at the nexus of science, countercultural activism, and the media, than *Z.P.G.*

***Soylent Green*: From Contraception to Cannibalism**

Whereas *Z.P.G.* has fallen into obscurity, *Soylent Green* has risen to attain "a reputation somewhere between cult and canonical."[77] The film is loosely based on

prolific science fiction author Harry Harrison's best-known work, *Make Room! Make Room!* (1966), the novel Paul Ehrlich endorsed in 1971 as "the most effective fictional treatment of the consequences of the population explosion that I have ever come across."[78] Harrison would later date his interest in overpopulation to a chance encounter—in the New York borough of Queens in the late 1940s—with a member of the Indian Communist Party: "Harry, you will starve with your writing. If you want to make a lot of money, I'll tell you what you can do: go to India and sell them rubber contraceptives."[79]

In the early 1960s, determined to write a realistic novel about the near, extrapolated future, Harrison went "to the specialists, the demographers and the petrologists and agronomists, and read a great number of thick books." All told, he spent five years in preparation,

> just digging out the material to make an intelligent estimate of what life would be like in the year 2000 A.D. At this time there were no popular nonfiction books on the dangers of overpopulation, overconsumption, pollution and allied problems. But there was a great deal of speculation in the scientific journals that interested me greatly.[80]

To extrapolate the near future, Harrison dipped into the recent past. Quoting from former President Dwight D. Eisenhower's 1959 famous statement on the U.S. government's position on birth control ("not our business"), a prologue suggests that by 1999, "this country will need more than 100 per cent of the planet's resources to maintain our current living standards. [. . .] In which case, what will the world be like?"[81]

The concern with overpopulation is evident from the first page ("On this hot day in August in the year 1999 there are—give or take a few thousand—thirty-five million people in the City of New York") to the last ("The screen hurled its letters across the empty square. Census says United States had biggest year ever [. . .] 344 million citizens in these great United States").[82] Alan Aldridge's psychedelic cover art (for Penguin) depicts human sardines packed in a tin coffin and a bibliography at the back directs readers to specialist journals (*Population Studies* and *Population Bulletin*) and academic books on overpopulation and contraception. As with *The Edict*, Harrison's novel is also ominously, reproductively dedicated

> To Tod and Moira.
> For your sakes children, I hope this
> proves to be a work of fiction.[83]

The didactic message of *Make Room* is made explicit in a lengthy Socratic dialog between the conspicuously Jewish character, Solomon Kahn (Sol Roth in the movie),[84] and Shirl, the naïve Irish-Catholic love interest of the central protagonist, detective Andrew Rusch:

> "You heard about the Emergency Bill? It's been schmeared all over TV for the last week."
> "Is that the one they call the Baby-killer Bill?"
> "They?" Sol shouted, scrubbing angrily at the boot. "Who are they? A bunch of bums, that's what. People with their minds in the Middle Ages and their feet in a rut. In other words – bums."

> "But, Sol—you can't force people to practice something they don't believe in. A lot of them still think that it has something to do with killing babies."
>
> "So they think wrong. Am I to blame because the world is full of fatheads? You know well enough that birth control has nothing to do with killing babies. In fact it saves them. Which is the bigger crime—letting kids die of disease and starvation or seeing that the unwanted ones don't get born in the first place?"
>
> "Putting it that way sounds different. But aren't you forgetting about natural law? Isn't birth control a violation of that?"
>
> "Darling, the history of medicine is the history of the violation of natural law. The Church—and that includes the Protestant as well as the Catholic—tried to stop the use of anesthetics because it was natural law for a woman to have pain while giving birth. And it was natural law for people to die of sickness. And natural law that the body not be cut open and repaired. [. . .] *Everything* was against natural law once, and now birth control has got to join the rest. Because all of our troubles today come from the fact that there are too many people in the world."
>
> "That's too simple, Sol. Things aren't really that black and white…."
>
> "Oh yes they are, no one wants to admit it, that's all. Look, we live in a lousy world today and our troubles come from only one reason. Too goddamn many people."[85]

Sol, the rational voice of Harrison, goes on to explain that for most of human history, people

> "bred like flies and died like flies. [. . .] That's why there never used to be a population problem. The whole world used to be one big Mexico, breeding and dying and just staying about even."[86]

This natural state of equilibrium persisted until the arrival of modern medicine:

> "Death control arrived. [. . .] People are still being fed into the world just as fast – they're just not being taken out of it at the same rate. [. . .] So the population doubles and doubles – and keeps on doubling at a quicker rate all the time. We got a plague of people who are living longer. Less people have to be born, that's the answer. We got death control – we got to match it with birth control."[87]

The rant goes on and on. When Shirl continues to equate contraception with "killing babies," an exasperated Sol, now shouting, explains the "ovarian derby":

> "Does anyone give a damn about the millions of sperm that don't make it? The answer is no. So what are all the complicated rhythm charts, devices, pills, caps and drugs that are used for birth control? Nothing but ways of seeing that *one* other sperm doesn't make it either. So where do the babies come in? I don't see any babies."[88]

The extended expository discussion—including a disquisition, over soup, on the Lippes loop, a then popular IUD—was unusually explicit and provocative for science fiction.[89] And yet, published two years prior to *The Population Bomb* and *Humanae*

vitae, Pope Paul VI's encyclical "on the regulation of birth" (July 25, 1968), *Make Room* did not make a splash. On the contrary, as Harrison later mused, the novel "came out too early and vanished with a dull whiffling sound."[90] And that might have been the end of it, were it not for the neo-Malthusian craze triggered by *The Population Bomb* and the efforts of actor Charlton Heston to bring the book to screen.

Today Heston is best remembered not only for his many iconic roles, including Moses in *The Ten Commandments* (Cecil B. DeMille, 1956) and a marooned astronaut in *Planet of the Apes* (Franklin J. Schaffner, 1968),[91] but also as "Hollywood's most prominent conservative," whose lifetime of political activism culminated in his presidency of the National Rifle Association. In the 1950s and '60s, Heston had used his celebrity status to support civil rights and Lyndon Johnson's arts programs, but in the early 1970s he became disillusioned with the Democrats and decisively rejected the political and cultural radicalism of the Left. [92] Heston was particularly concerned with overpopulation, a then bipartisan issue supported not only by leftwing environmentalists, but also by Republican conservationists and conservative anti-immigration activists.[93] According to his biographer, *Soylent Green* was "the only film that Heston made with the express purpose of advancing a political message. The fact that it was a movie about the population boom illustrates how important Heston perceived the issue to be."[94]

Heston was able to push Harrison's novel through the studio system, but only after the commercial success of *Skyjacked* (John Guillermin, 1972), in which he starred.[95] Initially, he and producer Walter Seltzer invested their own money to have a screenplay written,[96] but MGM was "wary of tackling [. . .] over-population – no doubt for fear of stepping on religious toes."[97] As Harrison later discovered, the

studio had been eyeing his book "as a possible film" for some years, but only "when a cannibalism twist was added" to Stanley Greenberg's script, did they give it the green light (Figure 3).[98]

[[Figure 3 about here.]]

Figure 3. Unlike many science fiction films of the 1970s, the poster for *Soylent Green* (MGM, 1973) pictures not an advanced transportation infrastructure, but the future of riot control. The "scoop" trucks shown here are meant to disperse the angry, hungry, overpopulated mob. Thorn (Heston) flees the scoops, but his neckerchief, the only green in the poster apart from the title, is the Albatross around his neck, standing for his knowledge of the cannibalism that is Soylent Green. Authors' collection.

Variety provided a pithy synopsis of *Soylent Green* upon its release in 1973, capturing many of the anxieties we have discussed so far:

> The year is 2022, the setting N.Y. City, where millions of overpopulated residents exist in a smog-insulated police state [. . .] where real food is a luxury item. [Charlton] Heston is a detective [named Thorn] assigned to the assassination murder of industrialist Joseph Cotton, who has discovered the shocking fact that the Soylent Corp., is no longer capable of making synthetic food from the dying sea. The substitute—the reconstituted bodies of the dead.[99]

Here we have the final, cannibalistic, revelation of the film. The oft-quoted line, "Soylent Green is people!" which Charlton Heston's character ends the film bellowing, is a Swiftian answer to the Malthusian question, though without the satirical intent.

As others have noted, Harrison's "condemnation of the Catholic Church's policy on contraception resulting in too many people being born" did not make it into the film.[100] On the contrary, the overtly Malthusian message of the book steadily diminished in prominence during the adaptation process. First, the original operating title of the film was *Make Room*, after the book, and signifying overcrowding; the title shifted, in part to avoid confusion with a recently aired ABC sitcom entitled *Make Room for Granddaddy*, to banal science fiction staples indicating only millennial anxiety: *9/99* became *Thorn: 2022*. There followed a period of ambivalence about the color of the soy-lentil plankton crackers after which the film is named: *Soylent Red* became *Soylent Blue* and only finally *Soylent Green.*[101]

As late as the August 1972 script, a police researcher in the film still has the line, "The sea can be revitalized . . . we can enforce birth control"; the line did not make it to the final version.[102] Though birth control had been a Hollywood taboo since the creation of the Production Code Administration in 1934,[103] censorship had largely abated by the late 1960s. Contraception may have remained unusually recalcitrant in the early 1970s, but it is not entirely clear why birth control was removed from the script. It is possible, as one critic presumed in 1978,[104] that MGM did not want to offend Catholics. But it may also be that the studio did not want to draw attention to a conspicuous flaw in *Soylent Green*'s logic, namely that contraception would always be a far more obvious and plausible form of population

control than "breeding [people] like cattle for food," as Heston wails in the film's climax.

Harrison, for one, was appalled by the script, which, he claimed, "transmogrified, denigrated, and degutted the novel from which it had been taken."[105] On set, he "propagandized everyone in sight, from grips to actors, by giving them copies of the original book."[106] Despite all this, and despite Heston's active support of family planning organizations, *Soylent Green* presented audiences with a defanged version of *Make Room*. Instead of Catholicism and contraception, we have euthanasia ("that old sf cliché, the suicide parlor. Something *I* would never do," moaned Harrison) and cannibalism ("idiotic cannibal-crackers (not in the book)").[107] The frenetic montage sequence that begins the film, which traces American history through increasingly urbanized and polluted landscapes, contains the clearest image of environmental crisis.[108] But overall, *Soylent Green* failed to visually portray overpopulation. The crowd scenes, as numerous critics have remarked, were "especially disappointing";[109] there just "weren't enough people" (figure 4).[110]

[[Figure 4 about here.]]

Figure 4. Screen shots from *Soylent Green* (MGM, 1973); of the establishing shot of New York City, 2022, and of the main crowd scene, a food riot shot through the greenish haze of pollution from a barely elevated height is more evocative of an ordinarily bustling marketplace, than of a demographic apocalypse.

The food issue, the less controversial side of the neo-Malthusian equation, did, however, resonate with contemporaneous concerns about adulteration. Ralph Nader and his "Raiders," a group of college students and young lawyers, had recently produced, among other books, *The Chemical Feast* (1970), a tract on food additives and sourcing, and *Whistle-Blowing* (1972), a conference report that popularized the titular neologism.[111] If we put these books together with *Make Room*, we get *Soylent Green*. Heston's character, Detective Thorn, who discovers and reveals the secret that "Soylent Green is people," is a police "insider," a thorn in the side of the system that perpetrates mass cannibalism. He is a whistleblower, a congenial position for many neo-Malthusian environmentalists, given their sense of discovery within a society dead-set on ignoring the data.[112]

In early iterations of the script, the film did not simply end with the revelation of cannibalism, but rather Thorn's whistleblowing led to confession and reform by the state. One draft had New York's Governor Santini reading out a televised confession: "Those responsible for the unfortunate excesses must be punished. However our only recourse now is to reveal to the people the measures we have taken to nourish them and to protect them. Gentlemen—the time has come to tell the truth!"[113] In another draft, Heston highlighted the line, "food was food before our scientific magicians polluted the water, poisoned the soil, decimated the plant and animal life," writing in the margins, "is this a hair preachy?? Talk instead about how good it used to be, instead of Nader polemic, which we hear so much of."[114]

In contrast to *Z.P.G.*, *Soylent Green* had "an excellent budget" (around $4 million), "big name stars" (Heston and Edward G. Robinson), and a seasoned director (Richard Fleischer, who had previously directed *20,000 Leagues Under the Sea* (1954) and *Fantastic Voyage* (1966));[115] it was a moneymaker and a crowd

pleaser.[116] Newly organized genre fans awarded *Soylent Green* the first Nebula Award for Best Script in 1974 and the second Saturn Award in 1975.[117] In contrast to the fracas over *Z.P.G.*, experts and lay activists were largely content with the film. A generally positive review in *New Scientist* argued that, although *Soylent Green* "never really meets the wider issue of overpopulation head-on," it nonetheless has a "tight and sophisticated script" and was an "enjoyable thriller."[118]

Frank R. Bowerman, an environmental engineer with the Los Angeles solid waste program and technical consultant on *Soylent Green* personally endorsed the "science-fact suspense film" he had worked on:

> I am of the firm conviction that uncontrolled population expansion and its concomitant pollution of the air and the seas is the gravest problem facing mankind. [. . .] Essentially *Soylent Green* plays a murder melodrama against the background of the burgeoning population. [. . .] I am involved [with *Soylent Green*] because I fervently believe that action must be taken now to control the unbridled explosion of human beings. [. . .] There is still time to reverse the trend. With action. The alternative is that *Soylent Green* will be more than a warning. It could become the epitaph for mankind's gravestone.[119]

In this regard, Bowerman was typical of the many scientific experts who in the 1970s enthusiastically lent their authority to cautionary, ecologically themed films about the future in order to promote political action in the present.[120] Heston too remained "very proud of the film and delighted by its success."[121] Even Harrison was half-pleased with *Soylent Green*, which he conceded, had "delivered" the

message of his book by showing "what the world will be like if we continue in our insane manner to pollute and overpopulate Spaceship Earth."[122]

Reviews in the mainstream press were, however, more ambivalent. Influential critic Rex Reed joked in the New York *Daily News* that viewers who did not see the end coming had "flunked Cannibalism 101."[123] Jay Cocks, writing in *Time* magazine called the film "intermittently interesting,"[124] and *New York Times* critic A. H. Weiler wrote: "*Soylent Green* projects essentially simple, muscular melodrama a good deal more effectively than it does the potential of man's seemingly witless destruction of the Earth's resources."[125] Referring to the downgraded status of the future's women as "furniture," novelist Penelope Gilliat vented in *The New Yorker*: "The latest Fleischer infection [*sic*] is called 'Soylent Green,' set in the year 2022, and starring scorn for women's lib and virtuous points for antipollution and soil conservation."[126]

Though unafraid of sex and violence, not to mention euthanasia and cannibalism, *Soylent Green* purged all references to birth control. As a result, it came to be regarded more as a film about climate change than overpopulation. Above all, it is associated with the famous and now largely decontextualized catchphrase, "Soylent Green is people!" In the 1990s, spoofs on *Saturday Night Live* and *The Simpsons* introduced a younger generation to the "cult" film, and today we can not only buy T-shirts, mock crackers and other paraphernalia,[127] but drink, if we dare, a food replacement product named Soylent. A remake has been rumored for years and changing tastes have shifted the film's status towards the "best remembered" of the 1970s dystopian science fiction films.[128] Though largely disconnected from its origins in the Malthusian moment, *Soylent Green* has gained new contexts and so become newly relevant and differently meaningful.[129]

Follow the Popcorn

In reconstructing the production and reception of the two Hollywood films most directly indebted to Paul Ehrlich's *The Population Bomb*, our aim has been to extend the historical understanding of population control beyond the high-level intellectual and political discourses thus far privileged by historians of the Malthusian moment. Taking cinema as the example, we have argued that fictionalised and filmed scenarios were constitutive of public debates around population, birth control and the biosphere. As such they should be an essential part of the story. In so doing, we have followed the popcorn to a different kind of story about the nexus of science, countercultural activism and mass communication in the "long 1960s."

From the mid-1950s to the mid-1970s, scientists became both the objects of organized criticism and campaigners in their own right while student protesters turned campuses and laboratories into "theatres of demonstration."[130] As we have demonstrated in this article, it was not only campuses and laboratories, but also movie sets and cinemas that became hotly contested sites of activism as experts and lay activists alike engaged in public struggles—over the control of knowledge about the planet's future, its presentation as fact or fiction, and the very meaning of "zero population growth." Though *Soylent Green* did not provoke a fracas, it was no less an object of negotiation, contestation, and compromise between scientists, activists and filmmakers than *Z.P.G.*

When thinking about the science-activism-media nexus in the Malthusian moment, it is important to recall that *Z.P.G.* and *Soylent Green* were conceived, scripted and produced in years that saw the consolidation and mainstreaming of an

ecological movement that culminated in the U.S. Environmental Protection Agency (1970) and the first Earth Day (1972).[131] This brief, intense period was just as crucial for public debates and legislative reforms around women's reproductive rights. *Z.P.G.* came out in 1972, the same year that saw the Supreme Court extend the right to birth control to unmarried people and reverse the last of the state laws against contraception. By then several states had already legalized abortion. *Soylent Green* came out in 1973, the year that witnessed the landmark decision on abortion in *Roe v. Wade*, a case that had reached the Supreme Court in 1970.[132] Both films, then, were as much a product of these heady years that liberalized access to contraception and abortion as they were of the heyday of American environmentalism.

As we have shown for both *Z.P.G.* and *Soylent Green*, unless one follows the popcorn, even to a mediocre or downright bad film that failed to make a lasting impression, one cannot adequately understand the Malthusian moment. Grassroots activism around population control was about more than elite intellectual and political discourses. As we have argued in this article, fictionalized and filmed scenarios played a constitutive role in environmental and reproductive activism, and in the imperative of both movements to reach a large number of people. This makes mass-market fiction, both on paper and celluloid, a privileged site of contestation. Fictional scenarios, on film and in paperback, were constitutive of activisms' engagement with mass communication in the Malthusian moment. But this is not a general rule. In the 1980s, for example, television and video—not cinema—dominated anti-nuclear and anti-abortion activism.[133] When it comes to the always-contested production of scientific (and medical) authority, the specificity of the medium—from 16 mm to digital—matters. It matters because different media engender different forms of engagement that can, in turn, lead to different outcomes.

Today, we still read books, watch movies, and listen to radio, but social media and the Internet increasingly structure our public debates, activist campaigns, and social movements.[134] Beyond the Malthusian moment, a closer examination of the nexus of science, activism and communication would do much to enrich the historical understanding of related fields—from abortion, IVF and stem cells, to nuclear power, fracking, and climate change.

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[75] Brosnan, *Future Tense*, 201; Gene Wright, *The Science Fiction Image: The Illustrated Encyclopedia of Science Fiction in Film, Television, Radio and the Theatre* (London: Columbus, 1983), 281.

[76] James Leggott, "*ZPG: Zero Population Growth*," *Science Fiction Film and Television* 3, no. 2 (2010): 335–338, 335.

[77] Ibid. On cult films more generally: Justin Smith, *Withnail and Us: Cult Films and Film Cults in British Cinema* (London: I.B. Tauris, 2010).

[78] Thomas M. Disch, ed., *The Ruins of Earth: An Anthology of Stories of the Immediate Future* (New York: Berkley, 1971), 116.

[79] Harry Harrison, *Harry Harrison! Harry Harrison!* (New York: Tor, 2014), 271.

[80] Harry Harrison, "The Beginning of the Affair," in *Hell's Cartographers: Some Personal Histories of Science Fiction Writers*, eds., Brian W. Aldiss and Harry Harrison (London: Weidenfeld and Nicolson, 1975), 76–95, 92.

[81] On Eisenhower's opposition to birth control provision: Donald T. Critchlow, *Intended Consequences: Birth Control, Abortion, and the Federal Government in Modern America* (New York: Oxford University Press, 1999), 41–45.

[82] Harry Harrison, *Make Room! Make Room!* (New York: Doubleday, 1966), 9, 222.

[83] In 1966, *Make Room* was simultaneously published in hardcover in the United States by Doubleday and serialized in *Impulse*, a British monthly collection of science fiction stories. Penguin and Berkley Medallion released mass-market paperback editions in 1967, the complete novel was republished in *A Science Fiction Omnibus on Pollution* (1971), and a shortened version, "Roommates," appeared in *The Ruins of Earth* (1971), an ecologically themed anthology of science fiction. See Paul Tomlinson, *Harry Harrison: An Annotated Bibliography* (Holicong, PA: Wildside Press, 2002). On *Impulse*: Mike Ashley, *Transformations: The Story of the Science-Fiction Magazines from 1950 to 1970* (Liverpool: Liverpool University Press, 2005), 245–248.

[84] On the significance of Sol's Jewishness in the film: Patricia Erens, *The Jew in American Cinema* (Bloomington, IN: Indiana University Press, 1984), 364.

[85] Harrison, *Make Room*, 172–173.

[86] Ibid., 173.

[87] Ibid.

[88] Ibid., 174.

[89] On the Lippes loop: Chikako Takeshita, *The Global Biopolitics of the IUD: How Science Constructs Contraceptive Users and Women's Bodies* (Cambridge, MA: MIT Press, 2012), 46–54, 65–67.

[90] Harrison, "The Beginning of the Affair," 93.

[91] Amy Chambers, *Film and History:* Planet of the Apes *as History* (PhD thesis, Bangor University, 2013).

[92] Emilie Raymond, *From My Cold, Dead Hands: Charlton Heston and American Politics* (Lexington, KY: University of Kentucky Press, 2006), 1.

[93] Robert D. Lifset, "In Search of Republican Environmentalists," *Reviews in American History* 36, no. 1 (2008): 117–125; Paul Sabin, *The Bet: Paul Ehrlich, Julian Simon, and Our Gamble over Earth's Future* (New Haven, CT: Yale University Press, 2013), 189–197; Sebastian Normandin and Sean A. Valles, "How a Network of Conservationists and Population Control Activists Created the Contemporary US Anti-immigration Movement," *Endeavour* 39, no. 2 (2015): 95–105.

[94] Raymond, *From My Cold, Dead Hands*, 223.

[95] Charlton Heston, *In the Arena: An Autobiography* (New York: Simon and Schuster, 1995), 476.

[96] Dennis Fischer, *Science Fiction Film Directors, 1895–1998*, (London: McFarland, 2000), 196.

[97] Brosnan, *Future Tense*, 200.

[98] Harrison, "The Beginning of the Affair," 93.

[99] Review of "Soylent Green" in *Variety*, April 18, 1973, 22.

[100] Fischer, *Science Fiction Film Directors*, 195.

[101] For the food context: Warren Belasco, "Algae Burgers for a Hungry World? The Rise and Fall of Chlorella Cuisine," *Technology and Culture* 38, no. 3 (1997): 608–634.

[102] *Soylent Green* script, August 10, 1972, Academy Film Archive.

[103] See Frank Walsh, *Sin and Censorship: the Catholic Church and the Motion Picture Industry* (New Haven, CT: Yale University Press, 1996); Gregory D. Black, *The Catholic Crusade Against the Movies, 1940–1975* (Cambridge: Cambridge University Press, 1998); Matthew Berstein, *Controlling Hollywood: Censorship and Regulation in the Studio Era* (London: Athlone Press, 1999); Leonard J. Leff and Jerold L. Simmons, *The Dame in the Kimono: Hollywood, Censorship, and the Production Code*, 2nd ed. (Lexington, KY: University of Kansas Press, 2001).

[104] Brosnan, *Future Tense*, 200.

[105] Harry Harrison, "A Cannibalized Novel Becomes *Soylent Green*," in *Omni's Screen Flights/Screen Fantasies: The Future According to Science Fiction Cinema*, ed., Danny Pearly (New York: Doubleday, 1984), 143–146, 143.

[106] Harrison also had plastic bags removed from view in the name of realism; plastic, he explained, "is a petroleum product and all the world's petroleum had been used up by this time. The bags were instantly whisked away": ibid., 144.

[107] Ibid., 145. See further, Matthew Burstein, "The Thanatoria of *Soylent Green*: On Reconciling the Good Life with the Good Death," in *Bioethics at the Movies*, ed., Sandra Shapshay (Baltimore, MD: Johns Hopkins University Press, 2009); Rohit Dalvi, "The Tragic Life of Sol Roth: Why He Won't Just Eat *Soylent Green* and Shut Up," in *Heroes, Monsters and Values: Science Fiction Films of the 1970s*, ed.,

Michael Berman and Rohit Dalvi (Newcastle Upon Tyne: Cambridge Scholars, 2011), 89–105.

[108] The montage was produced by Chuck Braverman, a young, experimental filmmaker whose influential short film, *American Time Capsule*, debuted on CBS's *Smothers Brothers Comedy Hour* in 1967: Mitchell Stephens, *The Rise of the Image, the Fall of the Word* (Oxford: Oxford University Press, 1999), 136–137; David Bianculli, *Dangerously Funny: The Uncensored Story of the Smothers Brothers Comedy Hour* (New York: Touchstone, 2009), 237–238.

[109] Barry Keith Grant, *100 Science Fiction Films* (Houndsmills: Palgrave Macmillan, 2013), 143–144.

[110] Craig W. Anderson, *Science Fiction Films of the Seventies* (Jefferson, NC: McFarland), 53. Vivian Sobchack, in her classic history of American science fiction films, argued that *Soylent Green* was "at its visual best when convincing us that small things (a tomato, running tap water) are wondrous and strange." See Vivian Carol Sobchack, *Screening Space: The American Science Fiction Film* (New Brunswick, NJ: Rutgers University Press, 1987), 131.

[111] James S. Turner et al., eds., *The Chemical Feast: The Ralph Nader Study Group Report on Food Protection and the Food and Drug Administration* (New York: Grossman Publishers, 1970); Ralph Nader, Peter J. Petkas and Kate Blackwell, eds., *Whistle Blowing: The Report of the Conference on Professional Responsibility* (New York: Grossman Publishers, 1972). On Nader's Raiders: Daniel Horowitz, *The Anxieties of Affluence: Critiques of American Consumer Culture, 1939–1979* (Boston: University of Massachusetts Press), 162–202.

[112] The *OED*'s earliest entry for "whistleblower"—in the now familiar sense of an insider who alerts the public to the crimes of an organization—is from 1970, its usage "chiefly U.S.": http://www.oed.com/view/Entry/228546, verified November 23, 2015.

[113] *Soylent Green* script, June 21, 1972, Academy Film Archive.

[114] Ibid.

[115] Anderson, *Science Fiction Films of the Seventies*, 53.

[116] Brosnan, *Future Tense*, 205. See also John Douglas Eames, *The MGM Story: The Complete History of Fifty Roaring Years* (London: Octopus, 1975), 366.

[117] *Soylent* was also nominated for, but did not win, the Hugo.

[118] Keith Howes, review of *Soylent Green* in *New Scientist*, July 5, 1973, 38.

[119] Frank Bowerman, "Right on Target," in *MGM* Soylent Green *Pressbook*, 1973, Academy Film Archive.

[120] Kirby, *Lab Coats in Hollywood*, 172–173.

[121] Heston, *In the Arena*, 477.

[122] Harrison, "A Cannibalized Novel," 146.

[123] Paul Meehan, *Tech-Noir: The Fusion of Science Fiction and Film Noir* (Jefferson, NC: McFArland, 2008), 138.

[124] Jay Cocks, "Cinema: Quick Cuts," *Time*, April 30, 1973.

[125] A. H. Weiler, "Screen: *Soylent Green*," *New York Times*, April 20, 1973.

[126] Penelope Gilliat, "Hungry?" *New Yorker*, April 28, 1973. On the film's controversial portrayal of women as "furniture": Dennis M. Lensing, "The Fecund Androgyne: Gender and the Utopian/Dystopian Imagination of the 1970s," *Socialism and Democracy* 20, no. 3 (2006), 87–103.

[127] Meehan, *Tech-Noir*, 138.

[128] M. Keith Booker, *Historical Dictionary of Science Fiction* (Lanham, MD: Scarecrow Press, 2010), 249–250; See also Alan L. Gansberg, *Little Caesar: A Biography of Edward G. Robinson* (Lanham, MD: Scarecrow Press, 2004), 257.

[129] For an analysis of how a dated work of art may gain new contexts and so be returned to life: Nick Hopwood, "A Marble Embryo: Meanings of a Portrait from 1900," *History Workshop Journal* 73, no. 1 (2012): 5–36.

[130] Agar, "What Happened," 583.

[131] J. Brooks Flippen, *Nixon and the Environment*, Albuquerque (NM: University of New Mexico Press, 2000); Adam Rome, *The Genius of Earth Day: How a 1970 Tech-in Unexpectedly Made the First Green Generation* (New York: Hill and Wang, 2013).

[132] David J. Garrow, *Liberty and Sexuality: The Right to Privacy and the Making of* Roe v. Wade (Berkeley, CA: University of California Press, 1994); Leslie Reagan, *When Abortion Was a Crime: Women, Medicine, and Law in the United States, 1867–1973* (Berkeley, CA: University of California Press, 1997); John W. Johnson, Griswold v. Connecticut*: Birth Control and the Constitutional Right to Privacy* (Lawrence, KS: University of Press of Kansas, 2005).

[133] Rosalind Pollack Petchesky, "Fetal Images: The Power of Visual Culture in the Politics of Reproduction," *Feminist Studies* 13, no. 2 (1987): 263–292.

[134] For a review of how the Internet and social media structures climate change debates: Mike S. Schäfer, "Online Communication on Climate Change and Climate Politics: A Literature Review," *Wiley Interdisciplinary Reviews: Climate Change* 3, no. 6 (2012): 527–543.