The Art and Science of Stanislaw Lem

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A list of the nations that have produced most of the science fiction in the past century and a half shows a distinct pattern: they are precisely those that have attempted in modern times to expand beyond their national borders in imperialist projects: Britain, France, Germany, Soviet Russia, Japan, and the United States. The most obvious exception to this pattern is the science fiction of Central Europe, represented mainly by Karel Čapek and, even more importantly, Stanislaw Lem. Their works were written for audiences and in languages not only without hegemonic ambitions but, on the contrary, anxiously placed in the midst of imperialist conflicts. As their writing has, nonetheless, had a profound influence on the genre, I would like to examine this exceptional world-historical position of East-Central European, and specifically Lem’s, science fiction.

It is necessary to place this investigation in the context of a larger set of proposals about science fiction as a manifestation and meditation of technoscientific “imperial culture.” My main claim is that the genre of science fiction is an expression of the political-cultural transformation that originated in European imperialism and was inspired by the fantastic ideal of a single global technological regime. The conditions for the emergence of the genre were made possible by three historical factors: the technological expansion that drove imperialism, the need felt by national audiences for literary-cultural mediation as their societies were transformed from historical nations into would-be hegemons, and the fantastic cultural model of the technoscientific empire to be.

Some core elements of the genre appear in every science-fiction culture, but there are significant differences at the margins. Imperialist projects took different forms in different national cultures, depending on when they were embarked upon, the character of the home culture, and their material technological relations. I approach the matter as a complex evolution from imperialist expansions of nation-consolidating modernizing projects – i.e., attaching territories to the nation-state with the naive belief that the metropole would not be affected – toward the condition of global technical rationalization of power, currently most evident in the transnational market capitalism that Michael Hardt and Antonio Negri, in their book *Empire* (2000), treat as postmodern empire. Science fiction has been driven by a desire for the imaginary transformation of imperialism into empire, viewed primarily not in terms of political and economic contests among cartels and peoples but as a technological regime that affects and ensures the global control system of denationalized communications. It is in this sense that empire is the fantastic entelechy of imperialism, the ideal state that transcends the national competitions leading toward it. For most commentators, imperialism is the ideological justification for attempts by a nation-state to extend its power over other, weaker territories, in competition with similar nation-states striving for the same goals. Expanding on Hardt and Negri’s concept of empire as the more or less achieved regime of global capitalism, I argue that the imaginary empire at the heart of imperialism is a regime that fatally restricts the power of nation-states and maintains itself through institutions of global governance and exchange, information technologies, and the military dominance of a technoscientific superpower.

As a world-model, technological empire is simultaneously an ideological fiction and a way of experiencing the world. It is also what Peter Stockwell calls an archtext: a complex cognitive metaphor onto which one can map both readers’ sense of reality and the many different parts of the science-fictional megatext – the shared body of works and assumptions of the genre of science fiction (204). In this sense, the idea of empire is like that of utopia. Indeed, I will argue that the utopian archtext is closely linked to the model of
empire; I will emphasize this by treating real imperialism as the real growing pains of imaginary empire.

**SCIENCE FICTION AND IMPERIALISM**

The role of technology in propelling imperialist projects is often neglected. Yet technological development was not only a precondition for the physical expansion of the imperialist countries but an immanent driving force. It led to changes of consciousness that facilitated the subjugation of less developed cultures, even as it wove converging networks of technical administration and established standards of “objective measurement” that led inevitably to myths of racial and national supremacy (Adas 145). It stands to reason that science fiction, a genre that extols and problematizes technology’s effects, would emerge in those highly modernized societies where technology had become established as a system for dominating the environment and social life.

Imperialist states were at the wavefront of technological development. Their projects had what Thomas P. Hughes calls “technological momentum” (111). The tools of exploration and coercion as well as the tools of administration and production in the colonies formed gradually meshing systems. Colonial territories were treated as free zones where new techniques and instruments could be tried out by companies and bureaucracies far from the constraints of conservative national populations. These innovations then fed back into the metropole, inviting more and more investment, technical elaboration, and new applications. The exponential growth of mechanical production and the production of mechanisms continually widened the gaps between imperial agents and their subject peoples. Supremacy became a function of the technological regime (Adas 134).

There can be no doubt that, without constantly accelerating technological innovation, imperialism could not have had the force it did, nor would it have progressed so rapidly. Without steamships and gunboats, repeating rifles and machine guns, submarine cables, telegraph lines, and anti-malarial medicines, the power of imperial adventurers would have been greatly limited and perhaps not even possible. But imperial technology was not only a set of tools used for exploitation of the colonies. Imperial future shock blew back into the home country, consolidating a new idea of political power linked to technological momentum, essentially colonizing the homeland, too, and at a speed that made resistance futile. Each global technological success brought power and money to technological projects, creating a logrolling effect that drove irrational political and economic exploitation beyond tolerance in grand-scale uncontrolled social experiments. It also fueled ever more focused and complex technological momentum—until social conflicts, both within and beyond the national borders, could only be seen as politically manageable through technological means. With imperialism, politics became technological.

Let us look at this proposition from the perspective of literary history. It is generally accepted that the novel was an instrument for establishing bourgeois national consciousness. In Benedict Anderson’s well-known formulation, the novel was one of the tools for constructing the imaginary sense of national community in modernizing societies. Novels were projects of national consolidation and normalization. They were attempts to reconcile at least two great competing cultural desires: to preserve the knowledge of a society’s present in its language and collective memory (what Balzac called “the archeology of the present”) and to ascend into the world community of modern players; i.e., join the Club of Nations at the wavefront of historical progress.

The arena for effecting this reconciliation in fiction readers was the social constitution of the bourgeois national subject. Through the techniques of realism (on a broad spectrum, from satirical to naturalistic styles), readers were trained to conceive of agency in the world in terms of a dialectic between, on the one hand, the possessive individualism and control characteristic of capitalist social relations and, on the other, the spiritual-ethical and even transcendent dependence of the pre-bourgeois Christian worldview. Thus the modern bourgeois subject was typically modelled on characters who were physically negotiating a world of concrete objects and property relations; socially navigating through class and power systems in which control over objects and institutions was increasingly the source of meaning; politically manoeuvring in a world where the power to compel others was a matter of personal-individual interests; and psychologically defining themselves in dialectical terms in the conflict between the desire for power to compel others in one’s own interest and the desire to submit to romanticized love’s transcendent ethical power. These constituent aspects were also
concretely national inasmuch as their subject was linguistically constituted. Each protagonist and narrator demonstrated the ability of the national tongue to articulate and compel the dominant institutions, which were themselves linguistic constructs. It is relevant to our discussion of Central European science fiction that the realistic novel did not steer toward social concreteness as unambiguously as in Western Europe. Well into the twentieth century the major exemplars of the Polish, Czech, and Hungarian novel tended toward lyrical romanticism, historicism, and satirical abstraction, thus relying on the premodern models of the tale and the chronicle far longer than in the West.

I am not proposing that science fiction replaces bourgeois realism as the main mediating agent of late modernist national culture in the West. (Even so, some versions of that argument will make sense, if instead of science fiction we put forward a larger class of fantastic writing that incorporates science fiction’s traditional devices and world-pictures, a version of slipstream writing in which bourgeois realism, the non-Western fantastic, visionary satire, and science fiction are blended.) Aspiring technocratic audiences did not replace the bourgeois national publics wholesale. But science fiction did take on some of the role of mediating between the national pasts and the late modern “future present,” and it is important to establish the role national traditions had in this cultural work.

Students of imperialism know from the work of Hannah Arendt and Edward Said that imperial expansion had a profound effect on culture in the home countries, even when the effect was hardly noticed at the time. Since most bourgeois nation-states had completed their political consolidation only recently, and their social consolidation in many cases not at all, their underlying conflicts were often still active and menacing. Imperialism attempted to resolve domestic problems by exporting them beyond the borders of the homeland. As these “offworld” colonial constituencies established themselves, they put great pressure on the metropoles to give up certain constraints that went with the nation-state and to adjust to the “facts” of occupied territories: technological violence justified by ideologies of supremacy (Arendt 136–8). The corrosive effect that this justification, and the reliance on technological violence, had on the most positive institutions and values of the nation-state is seen climactically in the attempt by the home powers to reproduce their offworld successes on the Old Earth of Europe in the First World War (Adas 305–6). At that point, the colliding would-be empires revealed that their technosystems had determined their identities more than their histories did. Their national traditions could not extend to the colonies, mainly because the colonists themselves refused to accept the constraints they placed on their liberty. For adventurers like Rhodes, the national flag had been merely an “asset” in the work of imperial accumulation; for the home populations, it had represented the very reason for that accumulation.

For imperialists, the twentieth century’s world wars proved merely that national identity is a volatile investment instrument; for national populations it catastrophically undermined the politics of reality itself. For the imperialist subject, people are as malleable as matter; resistance is an alternative set of techniques. Political power is rarely a matter of personal interests made manifest in the public sphere; indeed, the notion of the public sphere is replaced by the field of action, where nature and social life are consolidated in the struggle for power over science, technology, or institutions that become the means of global cognitive control. For the imperialist subject there is strikingly little psychological agency, since the scale of the collision between different gnostic/technical worlds reduced nuance in the midst of struggles between radically differing worldviews. Romantic love, which plays a central mediating role for the modern subject, is much diminished since, in a universe where consciousness is malleable, love loses its transcendental charge. Desire for the non-instrumental means a longing for the archaic.

The imperialist subject is, in sum, less a dialectical synthesis of historical conflicts as it is a – sometimes naive, sometimes ambivalent – wielder of technologies of control and/or resistance. One of science fiction’s roles in the twentieth century has been to instill in national audiences a sense that its modernist struggles of national identity have been superseded by global struggles of technoscientific reason against nature and magic. The language of this position – like its concept of psychological agency – is primarily one of power; its narratives concern the adventure of domination.

Science fiction raises some very specific questions in this historical context. One is: are the differences in national traditions of science fiction due primarily to the desire to retain traditional cultural values against the engine of technological expansion? If so, then science fiction may have much the same function that novelistic realism had in bourgeois national modernization: managing the
abstract techno-political leap forward out of “domestic” culture from a nation among nations to a global culture. Has science fiction been a privileged thematic genre — perhaps in the way that film has been a privileged material medium — for expressing and representing the dialectics of this imperial process because of its central fascination with technology? Has science fiction laboured to manage the technological momentum inherent in imperialism by infusing it with national cultural “dialects” — symbol systems, literary forms and formulas, artistic techniques, and discourse practices? If so, what difference did it make whether the expansion was a gradual and articulated process, as with the British and French; or intense, short, highly artificial, and self-reflective, like the German and the Japanese; or a smooth accession and aggrandizement of economic and military power, as in the US; or imported from abroad in the process of economic and intellectual colonization, as in Russia and Central Europe? From the rear-view mirror of the imperialist projects, what role did a given technoculture occupy: that of dominant agency, marginal latecomer, counter-imperial adversary, or historical sublation? Finally, what was the character of the literary-cultural traditions that infused the fiction of sf?

National literary or artistic forms can lead us to the traditions that distinguish the styles of different nations’ science fiction. Clearly the genre is identifiable by the icons it uses: the spaceship, the alien, the robot, superweapons, biomonsters, and the more recent additions: wormholes, the net, the cyborg, and so on. It is not difficult to link these to colonialist and imperialist practices. They represent the power tools of imperial subjects, the transformations of the objects of domination, the ambiguities of subjects who find themselves with split affinities. In these terms, science fiction’s icons are abstract modern universals, free of specific cultural associations. Yet when we view or read sf of different national styles, we detect marked differences. The same icons are cast in the mode of political and/or visionary fantasy in Soviet science fiction and as scientific romance in British sf and its slashstick, dancehall Red Dwarf inversions. They are cast as fanciful ironic surrealism in post-Verne French science fiction and its vertiginous inversion, the camp of Mœuf hurlant; as supersaturated nationalist romanticism in German science fiction and its militant ecophile science fiction descendants; as catastrophism in Japanese science fiction and its hidden puppet-theatre traditions; and as galactic Edisonian problem-

solving and its wired beatnik bourgeois-bashing US twin of tech noir. These are, of course, crude characterizations. National styles develop along with social life and change constantly in response to influences, both domestic and foreign. There are also clear signs that these currents are intermingling, precisely because of the delight in diversity that Negri and Hardt consider characteristic of capitalist globalization.

SCIENCE FICTION AND EMPIRE

If we look at science fiction’s connection with technoscientific empire only from the perspective of historical imperialism, we will see an exoskeleton: the genre as the interface between the pressures of global capitalist evolution and national technoculture. To take a truly dialectical view, we also need to look at the internal space of the genre, its world-model, its assumptions of conceptual design through which it makes politics, society, ontology, and technology science-fictional. I believe that this imaginary world-model is technoscientific empire: sustained and justified, but also riven, by simultaneously interlocking and competing technologies of social control and material expansion. Science-fiction artists construct stories about why this empire is desired, how it is achieved, how it is managed, how it corrupts (for corrupt it must), how it declines and falls, how it deals with competing claims to imperial sovereignty, and how it is resisted. The history of science fiction reflects the changing positions of different national audiences as they imagine themselves in a developing world-system constructed out of technology’s second nature.

To see this connection concretely, let us take a quick look at the qualities that Hardt and Negri attribute to empire. Where imperialism is about unlimited growth, embodied in unlimited expansion of capital, markets, and production, empire is also about the consolidation of the expansions of the past and the irresistible attraction to imperial order. Its expansion is driven not necessarily by greed or national pride but by the superior ability of the imperial order to deliver peace and security.

Empire seeks to establish a single overdetermining power that is located not in a recognizable territory but in an ideology of abstract right enforced by technologies of control. Its characteristic space is horizontal, expansive, and limitless; it exhausts and suspends
historical time, pragmatically (i.e., cynically) taking up typological justifications from the past and the future as the occasion demands. Its goal is the management of global conflict or “world peace.” Empire continually reproduces and revitalizes itself through the management of local crises and, indeed, by the transformation of potentially global challenges into administrative conflicts. It eschews dialectics and transcendence, which are inherently destabilizing, in favour of constant intervention. It intervenes both in the social world and in the minds of private individuals, two spheres it fuses through pervasive communications technologies. Its physical space is limitless, open to perpetual expansion, and its social space is open to variety, hybridity, and relentless denaturing. Empire is the consummate replacement of nature by artifice. Empire is the fusion of force and legitimacy. Its order is its driving value, its driving motive is enforcement. Its laws are not the laws of God, but of science theorized globally and enforced locally, as exceptions. Technology pervades empire; it constructs a power grid, through which it distributes its force and, by doing so, converts the line of communication into a power cord.

As an imaginary political domain, empire is related to utopia. Utopia is an idealized image of the city-state, indeed nation-state, where internecine conflicts do not arise since the ideal congruence of right and law is an ontological given. Utopias resolve inherent differences through the irresistible logic of their order. They are spatially circumscribed, and so they easily contain their people, reinforcing their self-identity. Their hegemony may extend past their city walls, but they are essentially insular. They do not expand, and so their stability depends on their strict adherence to natural laws of balance. They are scientific and rational because their laws reflect a logic of stability inherent in natural reason.

The model of empire is grounded in the history of real empires. Utopia is crafted from an abstract conjunction of community and natural harmony; empire is energized by a more concrete relationship: the conjunction of might and right. Even in its most idealized form, empire is a complex machine that distributes – and thereby produces – force. In utopias, force is occasionally rationalized as a way of protecting the balance between people and state and of insuring the inviolability of the enclave. In empire all social and creative endeavours are shot through with the institutional violence that makes them materially possible. Imperial violence is so powerful, it must expand; contained, its society would implode like a black hole.

Science fiction’s debt to utopia is great, but it owes more to empire: science fiction’s technoscience – which is the basis of its icons, energies, and imaginary historical conflicts – has little to do with utopia’s institutionalized balancing acts and containment strategies. Technoscientific projects expand, mesh with others, and gain power from grand-scale conflicts that inspire new resolutions, which then evolve into new mechanisms. This expansion is both internal (the logic of its technical applicability and improvement) and external (the logic of its universal application). Violently overcoming obstacles placed in its way by “nature” – which is nothing less than the world-as-given before imperial technologies go to work on it – technoscience charges all its claims to right and law with the irresistible expansion of its violence. The force is justified, however, in the name of peace and order. Before armies and pro-consuls, technoscientific empire favours the adventurer, the Odyssean handyman far from home, whose desire for movement and conflict inspires his skill with tools. With each fight and each socio-technical problem solved, the imperial handyman gains increased personal sovereignty and power.

As empire produces perpetual conflict on local levels – Hardt and Negri call it “omnicrisis” (189) – that invites its intervention, imperial fiction produces adventures, and science fiction is most comfortable with such imperial adventure-worlds. Even the classical genres to which science fiction is often traced (the pastoral, the romance, the utopian cityscape) originate in the imperial imagination (specifically from Alexandria, Byzantium, and Rome), as do their shadow genres, the slave’s narrative, the journey through hell, and the dark city. Utopias demand placement, position, definition; they are, as Louis Marin calls them, games with spaces, real maps of imaginary territories. Empires are, by contrast, unbounded in space and restless in time. Empire is a model of constant, managed transition: its worlds are perpetually at some point on the timeline of imperial evolution, from initial expansion, through incorporation, then corruption, to decline and fall.

Even this is enough to see how much imaginary technoscientific empire offers science fiction. The genre’s favourite counterfactual operations and mechanisms are all made rational by imperial ontology. Time machines, faster-than-light travel, galactic history,
parallel universes, the restless reconstruction of relationships between the centre and the periphery endlessly replayed in the relationship between Old Earth and the offworlds, aliens and cyborgs, space opera, utopia and dystopia — these motifs, like many others in science fiction, rely on a cosmos governed by the laws and right of technoscience, and yet open to almost infinite variation. Science fiction is an endlessly productive engine of local crises in a highly tolerant universe from which it is impossible to depart.

This homology between empire and science fiction extends to formal levels. The cinematic serial form, for example, is particularly well-suited for imperial science fiction. It permits an enormous variety of elements to be juxtaposed with only minimal motivation. In each episode, yet another cultural metaphor of spatial or temporal disruption is managed. This has been true from the earliest versions, like Flash Gordon, to more recent ones, like Star Trek and Farscape. The serial permits alien and local elements to be acknowledged without threatening the order of things. The physically infinite expanse of space in such forms is generally controlled by forms of recursion and recapitulation — plot devices revealing that far-flung differences are related to the terrestrial metropole’s perennial problems. At its most intellectual extremes, science fiction can even imagine that basic laws of nature are artificial, tools for the manifestation and communication of power.

Since the basic conditions of science fiction are made possible by the ontology of technoscience, the genre sets out to imagine the effects of any technology that might affect the way we live now. This includes not only the near-future applications of already operative communication/control technologies but also technoscience that might radically transform the most basic aspects of physical reality, such as nanotech, faster-than-light (FTL) propagation, genetic engineering, etc. The only restriction science fiction writers have historically set for themselves is that the powers in conflict must test technology as a basis for sovereignty. Sometimes the drama is explicit, as in overt imperial science fictions. In works as various as The War of the Worlds (1898), The Day the Earth Stood Still (1950), Earth versus Flying Saucers (1956), Dune (1965), The Forever War (1974), Star Wars (1977), Ender’s Game (1985), Schismatrix (1985), Hyperion (1990), Le Guin’s Hainish novels, and Banks’s Culture novels, antagonistic technological regimes compete for dominance. Whatever their differences may be, however great the gulfs between them, they operate in the same social-ontological continuum, the most salient quality of which is the ability of sentient beings to construct technological cultures to manipulate and extend their power over the worlds in play.

In the human-against-nature variety of science fiction descended from Verne, heroic protagonists use their know-how to cope with problems posed by hostile natural phenomena. They may be ultimately successful, as in most catastrophe films, or they may fall to the superior power of the physical universe, as in works like the Strugatskys’ Far Rainbow (1963) and Komatsu’s Japan Sinks (1973). Whatever the outcome, each context is a local test case (and often a parable) for the resilience and maturity of human technoscience as a species enterprise. Even in stories that take resolutely antitechnological stances, and where the instrumental empire takes an Ozymandian fall, like Stewart’s Earth Abides (1949), the terms of struggle are determined by technoscience.

In the past fifty years, science fiction has come to occupy an important place in highly technologized cultures. In more and more areas, modernization wipes away premodern — and indeed pre-postmodern — hierarchical and transcendental worldviews that obstruct bureaucratic or market rationality and technological rationalization. Hypercapitalism and currently defunct “communist” internationalism labours to replace them with the “multicultural” coexistence of irreolvable, irreducible, and intractable differences that must never develop into serious challenges to imperial sovereignty. The utopian ideal of universal right and law is replaced by the imperial practice of corruption, i.e., constant violation of universality in the interest of power.

Empire manages its populations by bombarding them with a multitude of slogans, hailings, and subject positions. Each one pretends to offer the prospect of unity, consummation, and the fulfillment of wishes, yet each is comfortably corrupt. They reproduce the imperial process of establishing sovereignty by creating and managing crises in individual subjects. In its purist forms, science fiction ultimately places its trust in the problem-generating and problem-solving capacities of technology and the ontology of science. The more such hegemony is consolidated, the more contradictions it seeks out and strives to mediate in fiction. The most characteristic imperial fantastic forms may then be world blends, in which the technoscientific ontology of science fiction is mixed
with other kinds. This is a well-established element of the Japanese SF anime idiom. In many of the major works of the genre – Neon Genesis: Evangelion (1996–97), Serial Experiments: Lain (1998), Ghost in the Shell (1995), Galaxy Express (1996) – non-realistic domains of power or styles of representation infiltrate realism, creating hybrid worlds. It is also characteristic of much French science fiction, for which scientific plausibility is secondary compared with carnivalesque blending and philosophical metaphor. Many – perhaps most – important works of science fiction violate the strict rules of scientific plausibility and introduce heteronomic realities into their stories. Arguably, this signifies that the power to manage cultural differences is at least as important to science fiction as the cultivation of technoscience’s mythology.

THE CENTRAL EUROPEAN EXCEPTION

Within this context, the science fiction of Central Europe stands out as a formidable exception, rather like the planet Solaris among mappable worlds. It does not fit comfortably in the techno-imperial scheme I have described, yet it cannot be ignored. Most Central and East European countries have avid readerships, but few have actually produced science fiction that has made an impression on the genre. Romanian, Bulgarian, and Hungarian science fiction has been written, but it has been predominantly “romantic” or “folk” science fiction. I do not intend this as disparagement, only to indicate that these national SFs reflect the gravity of traditional humanism and romantic nostalgia characteristic of Central European bourgeois literary culture and lack a concrete sense of technological modernization’s power to undermine those values. In this, they resemble the science fiction of the so-called underdeveloped world more than of the techno-imperial cultures.

Moreover, the dominant influence on Central European science fiction since the Second World War has been Soviet science fiction, most of which projected an image of ethico-imperialism based on a romantic, rhetorical, nineteenth-century vision of humanistic values in full control of science and technology. The writers of the Soviet SF thaw – Yefremov, the Strugatskys, Gansovsky, Savchenko, and others – challenged these empty rhetorical postures and with it the sham image of a humanistic communist scientific empire. Although their works were read avidly whenever they were translated, they nonetheless did not inspire interesting science fiction in most Central European countries. For most of that region in the twentieth century, the gap between the technologically advanced countries and their own development did not lessen appreciably with Soviet domination. Their forced industrialization was not a matter of internal development; their science and industry served one huge empire and was not accompanied by the sense of intellectual agency and freedom that inspired in other populations the sense of political power through technology. In short, with no prospect of these peoples becoming free participants in the games of hegemony, science fiction had no mediating national function. On the contrary, under the Muscovite regimes the traditional function of literature to consolidate and conserve national identity was strengthened.

What was different in Capek’s Czechoslovakia and Lem’s Poland? I will not dwell on Capek here – suffice it to say that, when he wrote R.U.R. in 1920, Czechoslovakia was the tenth most industrialized country in the world. It was also politically a darling of the Entente, and Capek’s works were translated into the major European languages almost as soon as they saw print in Czech. There is also a characteristic urbic ambivalence in Capek about technological development, often remarked on even by his admirers. To put it simplistically, Capek saw Czechoslovakia as a very junior partner in a pan-European modernization process, benefiting from the benign attitudes, investment, and cultivation of all the major Western and Central European states. Capek was also not particularly interested in the world-historical effects of science and technology. Science fiction does not develop in societies where technological transformation does not occur at the level of daily life. Returning to the imperialist model, technoscience transforms all regions of a society equally, and the most active science-fiction literatures come from those cultures in which technological development has transformed the conditions of daily existence the most. In many Central European cities – especially the capitals – such transformations were limited to infrastructures, as in lighting and public transportation. Such modernization, detached from prospects of national cultural expansion, was ambivalently associated with urban anomie. (Capek once said that he was inspired to imagine his robots by observing the anomie of passengers crowded into a Prague streetcar.) In Capek’s Prague, there appeared to be a tolerable balance between historical culture and the transformative force of modernization.
global capitalism over rival models, I must reiterate that the notion of empire with which we are working here is a fiction—what is more, a somewhat unconscious fiction that gives horizon and shape to technological development. In this sense, ideologies are pretexts for hypermodernization. The imaginary goal of global technological consolidation in the Soviet regime appears first in inverted form, in the utopian euphoria of the early post-Revolutionary years, with the dream that political-ethical emancipation will liberate science in terms not merely of the social organization of scientific investigation but the character of nature itself. This ethical determinism is then frozen in the bizarre Lysenkoite science fiction of “socialist science,” an actually existing parody of historical imperialism that extended ideology into matter, making nature responsive to Party doctrine.

Soviet ideology “corrected” itself, returning in the 1950s to practical imperialist terms and conditions with the idea of the scientific-technological revolution (STR), which modified Marxism-Leninism sufficiently to permit technology (which under Stalin had, like science, been classified as an aspect of “superstructure”) a determining role in historical evolution. This immediately bore fruit in the space program, a source both of technological momentum and national pride. It was in this moment of transition in the Soviet bloc, when technology gained parity with ideology, that Lem wrote his most influential works. In the course of time, the technological logic of the arms race usurped, in Lem’s view, all ideological justifications, transforming the entire world into a game of self-reinforcing competition determined entirely by the irrational power of technological rationalization.

Lem’s science fiction stands out among the work of all other science-fiction writers. Were it not such a powerful synthesis of literary style and scientific-philosophical speculation, it could be labelled idiosyncratic, a distinction he shares with Calvino and Borges. It is especially risky to ascribe to one individual’s writing traits characteristic of a whole nation, let alone a region; yet that is exactly what I propose here. This is because the characteristics of Lem’s science fiction, when compared with the other national SF cultures, seem congruent with many of the contemporary interpretations of East Central Europe’s historical position in the Cold War, viewed as an ordeal between two competing empires that sought to base their power entirely on technological domination
justified by ideology. Poland, in this sense, played an active and exemplary role in this tug of war. It maintained a certain limited autonomy from direct Soviet intervention, yet obviously under tight colonial government. It was drawn culturally toward the modern West, and also to a memory of regional cultural autonomy and even hegemony, and it was placed several times by modern history in a vise between competing empires: Germany and Russia, “The West” and “The East.” Dependent on imperial Soviet control for the infusion of technological rationalization, the Polish population practiced resistance simultaneously through the refusal of modernization (for example, in agriculture) and through mathematics and theoretical science.

In this sense, Lem is a recognizable exponent of Polish culture in the Soviet period. His synthesis of premodern literary forms like the tale and the fable (and the corresponding rejection of critical realism) and his theoretical speculation on the power of technology to transform the very conditions of thought, with very little reference to concrete social and political changes, is characteristic of a culture that observes the competition of technological empires close at hand and seeks to transcend them with the only means available: passionate commitment to theory and science, uncontaminated by ideology or self-interest. The above includes perhaps most of all his meditations on technology as a motive force of culture and evolution, told from the perspective of disembodied witnesses like Golem xiv or the Summalogist, or refuseniks of domination – explorers like Kelvin, Rohan, and Hogarth, who reject exercising physical power in order to maintain intellectual and ethical dignity in the face of resisting Others.

Lem’s protagonists are almost never in a position of real power. They are not socially powerfully inventors or explorers. They are not warriors, governors, ambitious adventurers; they are not rebels, utopian founders, world-transformers; they are outsiders. This is not rare in science fiction – indeed one of the attractions of the genre is the way it imagines outsiders becoming endowed with power, either through technological changes that transform weaknesses into strengths, or through quasi-evolutionary changes, in which an ostensibly weaker organism turn out to have greater adaptive capacities than the stronger. These are connected with the modern myths of world power: how a nation overcame obstacles to take a dominant place in the world. But Lem’s outsiders are not beneficiaries of evolutionary transformations, or even of scientific gnosis. Their exceptional state – and they are all exceptional – has more to do with their eccentricity and exclusion from the mainstream and hence from power and influence in the world. Kris Kelvin is a psycho-Solarist who has few hard scientific skills. His strength is basically his debility, his “sentimental” innocence, and his capacity to let his feelings overcome his reason. Capable only of disproof, through persistent, desperate resistance to the militarization of research into the Letter from the Stars in His Master’s Voice, Hogarth alone is able to purify the project of all ideological prejudices and thereby lay the groundwork for a belief in the ethical purity of the original Senders. The authors of A Perfect Vacuum and the grotesque sketches are mostly cranks, whose knowledge brings no lasting benefit to others. They exist, as the title tells us, in a perfect vacuum – the vacuum that Golem tells humanity is the zone of freedom and risk, where the politics of the past must be jettisoned.

Lem’s aliens, too, are outsiders even among aliens, isolated in their corners of the universe. Solaris hangs in the cosmos signifying nothing. Its enormous powers are all self-intensive: even its effects on humanity (which is unable to extract useful knowledge from it, other than that such a thing is possible) are local and personal. The necroevolution of The Invincible is most likely the product of a universal law of evolution extended to cybernetic devices, but it is considered so local that the humans decide to leave it alone. Where most science-fiction cultures would be anxious about the cyberflies’ imperialist potential – like Stapledon’s Martians in Last and First Men, on whom they were partially based – for Lem they are not the problem. The desire to extend human hegemony over them is. The super-enlightened computers of Golem xiv sever their connections with humanity as soon as they are switched on and embark on a cosmic existentialist journey to discover the meaning of their own existence. Lem’s most frappant aliens of all, the Great Players of “The New Cosmology” (in A Perfect Vacuum), are so great that they communicate by changing the laws of nature, a game in which the moves consist of changes of the rules, leaving minor beings like humanity not only forever ignorant but forever out of play.

This attitude changes in Lem’s later work, as he becomes less interested in the toxic romance of scientific expansionism and takes as his theme the inexorable expansion of technological destructiveness, which he proposes, by the time of Fiasco, is out of the control
of even the best-intentioned civilizations. There is much here that is well-known to Lem’s readers: especially the recurring theme of autonomous technoevolution of weapons systems. The purest form of technoscientific imperialism is, after all, an arms race. It is perhaps too simple, but not entirely inaccurate, to speak of this as the point of view of the witness, the cool outside observer who affects a stance of detachment because there is no way to resist snowballing events.

Science in Lem is, moreover, almost always viewed as if it were autonomous from the human species’ intentions. As Golem XIV tells it, humans are vehicles for the playing out of forces that require reason and consciousness but are not controllable by the latter. We might call this unsentimental faith in rational materialism, but the utter inability of Lem’s human characters to affect political improvement of their paradoxical conditions – or rather his rejection of politics, national, or ideological, as a way to manage power – is also a rejection of any model of science as a creation of human society.

Lem has had significant influence on European and Japanese science fiction but considerably less on US writers. He seems to have acted as a model particularly to what we might call “rejectionfront science fiction”: fiction emphasizing the intractable paradoxes and defeats that technoscience leads to. From an abstract perspective, this is the modern version of the collision between the ideal and the real, between pure scientific ratiocination and “applied” science, between science as human creativity and technology as power and domination. But the great anxiety of the age is actually that science and technology are not really distinguishable in this way: that there is only scientific research encouraged, funded, obstructed, or neutralized by political-economic power; that the technoevolution described in Summa is not an abstract process viewed as if from a satellite but the actual form of contemporary political and cultural expansion, whether in the form of “scientific” collectivism or “scientific” capitalism. In either case, global politics is driven by a totalitarian ideal inherent not only in political ideologies but in the capacity of technology to intervene in and transform every aspect of human existence, from the global to the cellular, and all in the image of its own “evolutionary” tendency to consolidate and converge on the same “rational,” and now informational, basis. Lem’s science fiction has provided a model of hope in the inherent limits of technorationalistic expansion: that reason inevitably encounters its own contradictions. This point of view inspires anti-techno-imperialist writers and readers, who hold out for traditional non-technoscientific values. It is notable how powerfully Lem has influenced Russian, German, and Japanese science fiction – cultures where national-organic models are still very strong, alongside powerful technotransformative ones.

This is perhaps ironic from Lem’s point of view, for his science fiction has almost no interest in the national-organic model, except perhaps in his use of language, a subject closed to me. Lem’s science fiction represents the unique voice of the witness in the belly of the beast: the witness who has given up interest in the outcome of the collisions between competing political-technical forces. From his vantage point, the outcome is indifferent. In most national science fictions, the transition from a local to a global nation is tied to the expansion of a global technoscientific regime – hence galactic wars, colonization, management of empires, dissemination of inventions. For Lem the only thing at stake is the clear, dispassionate, ironic voice of the disinterested observer whose country and language cannot lay claim to power. If there is creative hubris in this role, it is in this disinterestedness that can observe destruction and evolution equally but preserves the edifice without laying claim to power. One might also argue that this is merely an illusion and that Lem’s disgust with the trash of science fiction is a result of his exclusion from the exuberant, energetic cultural life of a populace engaged in a collective world-historical adventure. Even when writers of the leading science-fiction cultures critique myths of progress and power, they are engaged in a project in which much is at stake. Even trash art can reflect the ambitions of global power. Arguably, this is the trade-off of science fiction: clarity, elegance, and mordant wit at the cost of agency.

We are not accustomed to thinking of Lem’s work in imperial terms – or, indeed, of technoscience as a unitary system with its own politics. Lem uses different models: one of the most comprehensive is the techno-evolution in Summa, treated with only minimal irony. There are, of course, others, such as the excesses of the human species’ appetites when it builds tools of infinite satisfaction, or the infinity of paranoid weapons-construction. In almost every case, Lem’s technoscience acts as if it were autonomous from the collective desires that produced it, as if humans were hosts of independent systems along the lines of natural evolution, or the
insect kingdom, or the dynamics of games. This is partly the Swiftian diminishing of human pretensions and partly pure science fiction – in Gunn’s and Aldiss’s terms, the species’ ironic encounter with its own power or its lack, which always has unintended consequences, whether it’s the neurotic spaceship of “Ananke,” the microcosmic implosion of the datasphere in “Prof. A. Donda,” or others. At the same time, this purity and clarity comes at the expense of involvement, of influence, of the capacity to direct or divert technology to the species’ benefit. Catastrophe may be averted, but not because of human intentions. When a quasi-utopian technical solution seems to have been achieved, like the betrization of *Return from the Stars*, the protagonist and the national audience-surrogate had nothing to do with it.

It is clear that this vision is closely linked to the Cold War position of Central Europe – frozen between competing would-be empires that increasingly follow the mutually shaping game logic of technoscientific acceleration, until destructive technoscience forms its own political sphere. Although Lem often writes as if he preferred to be among the “dwarves” of hard science versus the “elves” of the humanities, as a leading science-fiction writer he enjoys the cultural capital of being a scientific-humanist intellectual. Where technoscientific decisions are actually made, scientific intellectuals, including science-fiction writers, invest them with a sense of social power and participate in the illusion of contributing to collective will and decision-making. This is a postmodern phenomenon: attending a radical change in the concept of nation away from the image of historical collective (let alone a biological one) to the image of the nation as passengers of a vehicle ever on the move, ever picking up and distributing new passengers, ever extending its route and increasing its speed. Thus the technoscientific imperium is much like the hypermodern city extended to the whole world.

Lem’s role in this has been, of course, as paradoxical as Poland’s and Central Europe’s has been. He lives in the city but, as he puts it, as a Robinson Crusoe, collecting the useful debris of the higher civilization, ever oppressed by his demanding scientific God and, because he’s a Pole, without a servant Friday and forever resisting becoming anyone else’s servant or a colonized subject. Moreover, the city he is most identified with is Kraków: a medieval preserve, a frontier town between Western Europe and the great village-world of Eastern organic society. He was embraced and put forward as an influential scientific intellectual in both the Soviet Union and later in Germany. But in each case his work was put to uses alien to his vision. His image of space exploration and the warsphere had nothing to do with the utopian ambitions of the Soviet space program and the German eco-warriors.

There is a bitterness in Lem’s vision that we don’t expect in the science fiction of rising, previously marginal technoscientific cultures like India and China. Bitterness of being the victim of industrial-scale destruction, of seeing one’s countrymen willing partners in it, collaborating with the death-machines, the flexible prisons, and then watching the competing would-be empires threatening the existence of life itself, caring no more for the people below than dinosaurs for mammals scurrying under their feet. But here is where Lem, ever the paradox-monger, affords a positive answer, after all: not in the lofty critiques of degraded projects but in the travels of Ijon Tichy and the robot fables, in which the Münchhausen-like extravagance of narrative excess returns science fiction to the folk-tale and the tall tale, to the “organic stratum,” written in a language that is, in a sense, protected from the world, preserving the spirit of the national language without giving up knowledge of the world. This aspect of Lem, much as of Karel Čapek, is protected from universalizing critics like me, but that is precisely what gives me great comfort. This, indeed, may be the paradoxical gift of the science fiction of Central Europe.

NOTES

1 See Headrick *The Tools of Empire*.
2 Brian McHale argues in *Postmodernist Fiction* that postmodernism replaces modernism’s *epistemological dominant* (typified by detective fiction) with an *ontological dominant* (typified by science fiction). He elaborates on science fiction’s privileges in *Constructing Postmodernism*, where he identifies cyberpunk as the quintessential postmodern genre. I have argued (in “An Elaborate Suggestion,” my review of *Constructing Postmodernism*) that science fiction is not truly concerned with ontology, since the many worlds it admits are part of the single, albeit diverse and highly malleable, immanent world of scientific materialism. To the extent that there are significant world differences, science fiction posits that they were either created or discovered (and hence understood and
appropriated) by technology. McHale’s notion of postmodernism’s ontological dominant is strengthened, however, if we take not science fiction but the fantastic as the privileged genre of the age. Fantastic fiction and its various slipstream hybrids do not require any ontological decisions about the status of the imaginary worlds.

3 In 1923 R.U.R. was discussed on stage in London by a panel that included Chesterton and G.B. Shaw.

4 On Čapek, see Swirski, chapter 4.

5 On the history of Soviet “socialist” science, see Bucbolz, Graham, and Greenberg.

Even if the story remains the same, it is impossible for a film to evoke the particular sign system employed in a literary work. It is therefore crucial to keep in mind that the process of adapting a book involves identifying the elements that should be transposed into a film, rather than following a literary original to the letter. According to Alicja Helman, a film adaptation implies that a literary text has been thoroughly read, even though deliberate changes and transformations made by a film director introduce meanings that may not have been intended by a writer. A filmmaker grafts the original material into a new context that, in the case of Lem’s works, is not only the context of science fiction but also that of a horror film, a psychological drama, or a detective story.

As the full scope of Lem’s works comprises a great variety of genres, I shall focus on the most significant problems that must be solved by filmmakers adapting his novels. With this in mind, I will trace the evolution of Lem’s narrative conventions from utopian concepts, influenced by socialist realism, through the elements of grotesque – in itself a challenge to the paradigms of science-fiction literature – down to the phase of psychological diagnosis of human condition in a crisis situation.