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How to Cite: Badia, L 2019 The Absolute Indeterminacy of Karel Čapek's Science Fiction. *Open Library of Humanities*, 5(1): 59, pp. 1–25. DOI: <https://doi.org/10.16995/olh.130>

Published: 13 September 2019

Peer Review:

This article has been peer reviewed through the double-blind process of *Open Library of Humanities*, which is a journal published by the Open Library of Humanities.

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POWERING THE FUTURE: ENERGY RESOURCES IN SCIENCE FICTION AND FANTASY

The Absolute Indeterminacy of Karel Čapek's Science Fiction

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This article reintroduces readers to the science fiction novel *The Absolute at Large* (1922) by Karel Čapek, one of the most influential but largely unacknowledged voices in early twentieth-century literature. I frame *The Absolute at Large* as a narrative about 'free energy', a term I have proposed to examine a range of relationships implicated in speculation about super-abundant or 'virtually-limitless' energy sources. I argue that Čapek's commentary emerges in the double meaning of the titular 'Absolute'—a reference to both free energy and the divine—which foregrounds an inherent indeterminacy folded into the promise of abundance. This reading is made by examining Čapek's serious engagement with the philosophy of pragmatism, which has been consistently misrepresented in the existing literature on Čapek's legacy.

Introduction

Karel Čapek's 1922 science fiction novel, *The Absolute at Large*, is premised on mounting fears in early twentieth-century Europe about the exhaustion of coalmines and the disastrous effects it could have for a newly independent Czech economy. Set in 1943 (the near future of its publication), the novel's opening scene finds G. H. Bondy, the intrepid but imprudent owner of the Metallo-Electric Company (M.E.C.), pushing aside his daily newspaper and its stories of wars and cabinet meetings to consider a more pressing matter: "The Coal Crisis!" he said to himself. "Mines getting worked out; the Ostrava basin suspending work for years. Heavens above, it's a sheer disaster!" (Čapek, 1922: 1). Historically, British coal production peaked in 1913, and, prefiguring the recent discourse on peak oil, many early twentieth-century industrialists were speculating about an uncertain future of energy transition and possible scarcity. Bondy finds a solution to the pending catastrophe by acquiring the 'Karburator'— Čapek's fictional atomic energy generator that anticipated the historical development of nuclear fission generators by roughly twenty years. The inventor of this extraordinary technology, Rudy Marek, explains that the Karburator creates limitless energy as it functions to 'break up atoms into electrons, and to harness the electrons to make them work' (Čapek, 1922: 11). The Karburator performs the 'perfect' combustion of matter; unlike burning coal, which leaves material byproducts, the Karburator leaves no waste: 'If we used up the whole of the atomic energy, we should use up the whole of the atoms. In short, *the matter would vanish altogether*' (Čapek, 1922: 12, emphasis in original).

The Karburator is one iteration of what I have termed a 'free energy' fantasy—a speculative future scenario in which humanity has gained control of a superabundant or 'virtually-limitless' energy source. I collect fantasies of free energy to uncover a largely obscured history of theorizing the relationship between energy and culture, and I examine how speculative narratives about superabundant energy sources have shaped the historical realities of American culture and politics since the beginning of the industrial era.¹ Reaching back to the early nineteenth century, for

¹ The following research about "free energy" speculation from the nineteenth century to the present day

instance, free energy scenarios channeled debates about human labor, as exemplified by Thoreau's critique of a free energy utopia in the 1830s (Badia, 2014a). Fast forward to the present moment and we find the idea of free energy informing discussions about fusion technologies, in which energy is often promised to be in unlimited supply for human projects but simultaneously harmless to the rest of the planet. In *The Absolute at Large*, the 'free' of 'free energy' refers to the limitlessness of its source materials (the Karburator runs on minuscule amounts of coal, pebbles, and other readily available materials), the absence of negative consequences from its physical production (it produces no waste), and the superabundance of the energy it makes available for human use. In other words, the fantasy of the Karburator is the fantasy of energy use and production lifted out of the conditions and constraints of material and social ecologies.

Even so, in Čapek's fiction, free energy has a remainder and entanglement in an economy of a different order. Although the Karburator completely consumes its source material, the 'vital principle' of matter remains in unadulterated form: 'you're left with an indestructible residue—free and active Absolute' (Čapek, 1922: 23). In generating abundant energy, the Karburator also produces the Divine. Beginning with Bondy's own factory, workers feel an overwhelming sense of joy and pious reverence when the Karburator is running. They begin to refuse their paychecks and relinquish all material possessions to the poor; they perform miracles and acts of healing. The Absolute radiates out of Karburator-powered factories and into the surrounding towns, affecting everyone in proximity. Even Bondy's own Board of Directors is transformed: 'Gentlemen, let us give the factory to the poor! I move that we change the M.E.C. into a religious community of "The Humble of Heart"' (Čapek, 1922: 51). The simultaneity of God and free energy presents an immediate conflict for Bondy: the conditions needed to manufacture and sell Karburators are undermined

comes from my book manuscript, *Imagining Free Energy: Fantasies, Utopias, and Critiques of America*. This study examines how a range of authors (literary authors, social theorists, philosophers, scientists) have contemplated free energy scenarios and discourses about energy limits and limitlessness over the past two centuries when grappling with questions about social and collective life.

by the technology itself. Infinite energy and a social paradise on earth—as we will see, Čapek does not assume a simple relationship between the two.

While struggling to manage the problems of running a factory with God, Bondy and Marek seek the advice of a local clergyman, Bishop Linda, as one possible 'expert' who may be capable of negotiating 'Him' into a proper legal agreement (Čapek, 1922: 36, 31). Bondy wonders if the Absolute would agree, perhaps, to the following contractual terms: 'We guarantee to produce You discreetly and continuously to an extent to be fixed by mutual agreement; in return for which You pledge yourself to refrain from any divine manifestations within such and such a radius from the place of origin' (Čapek, 1922: 31). The Bishop, however, has an unexpected response to the possibility of encountering the Divine:

"And I tell you", said the Bishop quietly and sweetly, "that at the end of" [a] year, not a single Karburator will be running.

"Why not?" [ask Bondy and Marek]

"Because mankind, whether believers or unbelievers, cannot do with a real and active God. We simply cannot, gentlemen. It is out of the question ... In a year's time you still stop the manufacture of the Absolute of your own accord. But, oh, the damage, the devastation it will bring to pass in the meantime! Gentlemen, in the name of Heaven, do not imagine that the Church brings God into the world. The Church merely confines Him and controls Him. And you two unbelievers are loosing Him upon the earth like a flood. The ship of Peter will survive even this deluge; like the Ark of Noah, it will ride out this inundation of the Absolute—but your modern society" cried the Bishop with a mighty voice, "*that* will pay the price!" (Čapek, 1922: 43–4).

The concurrence of free energy and the Divine is the problem from which Čapek's commentary emerges. The Absolute contains both the utopian promise of unlimited resources alongside an active and unpredictable God of transformation. In Čapek's novel, the Absolute maintains a formal and ontological indeterminacy, even though speculations about free energy (in both fictional and historical texts) consistently present energy abundance as a final solution to the perennial problems of human

history. In other words, free energy speculation routinely involves utopian fantasies about how energy abundance will resolve resource inequalities, eliminate the need for human labor, end human conflict, and create the optimal environmental conditions for human flourishing. Bondy rehearses these possibilities early in the novel: '[The Karburator] will cheapen production to an unbelievable extent. It will do away with poverty and hunger. It will some day save our planet from freezing up' (Čapek, 1922: 30). In denying all of these outcomes, I read *The Absolute at Large* as a critique of utopianism, material determinism, and, more specifically, 'energy determinism', to borrow Timothy Mitchell's term. As Mitchell explains in *Carbon Democracy: Political Power in the Age of Oil* (2013), 'technological uncertainty' stands in contrast to the technological, material, or energy determinisms that commonly circulate in discourse about energy transitions and the possibility of resource abundance. Mitchell writes:

Rather than politics being determined by natural forces, or, conversely, being freed from natural constraints by the continued progress of science and technology, we find ourselves in the midst of increasing numbers of socio-technical controversies ... Technical change does not remove uncertainties, as the conventional view of science proposes—it causes them to proliferate ... Such technical controversies are always socio-technical controversies. They are disputes about the kind of technologies we want to live with, but also about the forms of social life, of socio-technical life, we would like to live (Mitchell, 2013: 238–9).

Čapek's is a unique narrative among works of SF prompted by an energy crisis. While many SF narratives begin with an initiating energy transition or crisis (such as an energy infrastructure collapse or the discovery/invention of a new energy source), subsequent plot developments are usually concerned with political and social dramas created by radically altered relationships resulting from the disruption. Narratives recount geopolitical conflicts, resource wars, and colonization campaigns in order to explore the deep interdependence of energy infrastructures with social, economic, and political systems. For example, the film *Avatar* (2009) is set in motion by the discovery of 'unobtainium' (a super-abundant energy source), but the rest of

its plot is focused on the interpersonal relationships caught in the violence inflicted on an indigenous population by an invading military force seeking the resource. The recent series *Occupied* (2015) follows a similar arc. Set in Norway in the near future, the series opens just after the Green party develops a limitless thorium-based energy generator and terminates oil and gas production in the North Sea. However, the narrative drama is primarily concerned with strained politics and personal relationships, as the Green Party maneuvers under the control of a Russian military force that has invaded to ensure the continual export of fossil fuels from Norway to Russia and the EU.

What is unexpected in Čapek's treatment of an otherwise familiar SF trope of energy crisis/transition, then, is how he holds to the question of free energy itself—the plot is driven by the consequences arising from a double Absolute that manifests both energy abundance and an unpredictable God. On first reading, the double Absolute may be interpreted as another strategy for commenting on the power of energy infrastructures to shape the social and political formations of industrialized societies. Or, we may read the double Absolute as a critique of the Catholic Church and organized religion more generally, as Čapek certainly makes religion the subject of satirical commentary as well. For instance, Bishop Linda's unique immunity to the spiritual effects of the Karburator leads Bondy and Marek to speculate that, 'perhaps he's had too long a training with God, or else he's a more hard-baked atheist than you or I' (Čapek, 1922: 36). Rather, I argue that combining free energy and the Divine produces a fundamental indeterminacy that acts as a critique of free energy scenarios, in so far as free energy fantasies are siphons for material and energetic determinisms that promise to create a utopian enclave or resolve the contingencies of history with resource abundance.

Čapek's choice to name free energy the 'Absolute' in order to develop an argument about indeterminacy is in keeping with the satirical tone of the novel. The word 'absolute' itself is typically used as an adjective instead of a noun; 'absolute' used as an adjective only has a clear meaning in reference to a particular entity or state of affairs (as in 'absolute ruler' or 'absolute disaster'). The meaning of 'Absolute' as a proper noun is almost exclusively confined to the long history of theological and

philosophical discourse, as in the Hegelian notion of 'Absolute Idealism'. I read Čapek's text as intentionally developing the strangeness of this term by heightening its formal dissonance through its use as a noun and by playing with its reference to Hegelian Idealism. Having earned a Ph.D. in philosophy with a focus on pragmatism, Čapek would likely have known the critiques of Hegel's Absolute Idealism by pragmatists such as William James. Čapek's critique of energy determinisms—made through the indeterminacy of the Absolute—becomes legible when we first understand the pragmatist framework that informed Čapek's thought. As I will argue in detail below, Čapek's notion of indeterminacy is developed formally at the level of language as well as conceptually as an argument about energy determinism. In Čapek's speculative world of free energy, social and material controversies and transformations continue to proliferate.

'The Čapek Generation'

Karel Čapek (1890–1938) was a widely celebrated Czech author during his lifetime, and his legacy persists today as one of the greatest writers in Czech history. He lived his most creatively productive years during the interwar period, after the Republic of Czechoslovakia was founded following centuries of Hapsburg rule. A leading author, playwright, and political essayist of the era, Čapek was internationally known for his deeply critical assessments of religion, capitalism, imperialism, and the rise of fascism. His considerable reputation and influence among the literary talents of his day has, in recent decades, been largely overlooked in the Western canon. However, contemporary scholars, such as historian Thomas Ort (2013), are reexamining the idea of 'The Čapek Generation', a designation used by cultural commentators during Čapek's lifetime to signal the depth and reach of his influence, even though the idea was never fully embraced by Čapek himself.

Acquainted with the leading authors of Europe, Čapek met with H. G. Wells, George Bernard Shaw, G. K. Chesterton, and John Galsworthy at PEN International in England (Tobrmanová-Kühnová, 2010: xxi); he garnered the great admiration and devotion of Milan Kundera (Heim, 2002: n.p.). Čapek shared an important correspondence with Thomas Mann and the two men sustained a friendship and

collaborated on antifascist campaigns in the 1930s (Ort, 2013: 5). Čapek's influence reached across the Atlantic through his publications and touring theatrical productions. Famed American playwright Arthur Miller, for example, has written of his influence:

I read Karel Čapek for the first time when I was a college student a long time ago in the Thirties. There was no writer like him—no one who so blithely assumed that the common realities were not as fixed and irrevocable as one imagined. Without adopting any extraordinary tone of voice he projected whole new creatures and environments onto an oddly familiar, non-existent landscape. He made it possible to actually invent worlds, and with laughter in the bargain (Miller, 1990: n.p.).

Čapek was nominated seven times for the Nobel Prize in Literature (every year from 1932 until his death in 1938) (Nobel Media, 2017), but it is widely thought that he was 'denied it in part because of the antifascist nature of his later writing and the desire of the Nobel Committee not to offend Germany' (Ort, 2013: 1–2).

When Čapek is referenced in the Western canon today, the acknowledgement is often confined to his lasting influence on the genre of science fiction. Informed by an extensive knowledge of contemporary science, his literary focus on the boundaries of the human, the conditions of labor, and the development of energy technologies were especially prescient for twentieth-century SF. For instance, in his play *R.U.R. (Rossum's Universal Robots)* (1920), Čapek coined the term 'robot' which he derived from a Czech word meaning forced labor. Not strictly machines, the 'roboti' of *R.U.R.* (also called 'artificial people' in the play) are fashioned from a chemical substrate developed in test tubes by a physiologist conducting biological research. *R.U.R.* opened in Prague and had successful runs in a number of U.S. cities including New York, Los Angeles, and Chicago. Publication of *The Absolute at Large*²—which first appeared serially in *Lidové noviny (The People's Newspaper)*—soon followed *R.U.R.*

² The title in Czech, *Továrna na absolutno*, is translated as *The Factory for the Absolute*.

in 1922. Alongside *R.U.R.*, Čapek is frequently acknowledged for his SF novel *War with the Newts* (1936), which concerns an intelligent species of newt that becomes subjugated by the businessman G. H. Bondy, a recurring character from *The Absolute*.

As a figure in the history of Czech literature, Čapek's reputation as a writer of philosophical literature rivals that of his influence in SF. His trilogy of novels, *Hordubal*, *Meteor*, and *An Ordinary Life* (1933–1934),³ has been hailed more than once as 'one of the most successful attempts at a philosophical novel in any language' (Wellek qtd in Ort, 2013: 5). Čapek earned a doctorate in philosophy at the University of Prague in 1915 (Kussi, 1990: n.p.), while also taking up short residencies at the University of Berlin and the Sorbonne in Paris (Ort, 2013: 4–5). His doctoral thesis was titled 'An Objective Method in Aesthetics with reference to the Visual Arts', and he published a book on pragmatism, *Pragmatism, or a Philosophy of Practical Life* (1918), shortly after earning his doctorate. He was a primary expositor of pragmatism in Eastern Europe at the time.⁴

A shared interest in pragmatism is often noted as a defining feature of 'The Čapek Generation'. This coterie of writers, led by Čapek and Thomas Mann, was influenced by the work of William James, John Dewey, Henri Bergson, and Max Weber and by philosophical critiques of positivistic science.⁵ According to Ort's account of the movement:

³ These novels have been collected and published together as *Three Novels: Hordubal, Meteor, An Ordinary Life*, by Catbird Press (1990).

⁴ As Emil Višnovský notes: 'There were no "pure" pragmatists or Deweyans within Czech philosophy in the first half of the twentieth century ... However, there was one original thinker deeply influenced by pragmatism for the whole of his life ... Instead of a philosopher, he became a world-famous writer—Karel Čapek (1890–1938) ... [*Pragmatism, or a Philosophy of Practical Life*] ... is a small book (sixty-three pages), but it is important because it was the first lucid and sympathetic exposition of pragmatism in Czecho-Slovakia, very readable and accessible to the general public. In fact, Čapek remained the only Czech intellectual who openly regarded himself a pragmatist (and also perhaps the only one who understood it correctly), and he applied this philosophy in his writing' (Višnovský, 2009: 96).

⁵ Even though Franz Kafka is not included among this particular coterie, Čapek's concurrence with Kafka is often noted: 'At the same time, within a space of fewer than seven years, three writers were born in the small Czech Lands, all of whom belong among the greatest figures of modern world literature. Born in Prague in April 1883, the author of *The Good Soldier Švejk*, Jaroslav Hašek; in the same city, some three months later, Franz Kafka; and lastly, on January 9, 1890, in the mining town of Malé Svatočovice, northeast of Prague, Karel Čapek' (Klíma, 2002: 17).

Coming of age in an atmosphere of acute rebellion against the positivism of the nineteenth century, Čapek and his closest peers were strident critics of reason, emphasizing the subjective and provisional character of all knowledge and the impossibility of its disentanglement from individual beliefs, desires, and values (Ort, 2013: 3).

While this reaction against nineteenth-century positivism aligned Čapek's coterie with other modernist movements of the early twentieth century, Čapek's politics were considered 'insufficiently radical' by many of his contemporaries, primarily because of his pragmatist philosophy (Ort, 2013: 2):

They [Čapek's circle] emphasized instead the limitations of rational knowledge and the necessity to respect the multiplicity and relativity of all life values. And, in contrast to the postwar avant-garde's embrace of the politics of the revolutionary left, the artists of the Čapek generation appeared more moderate and reformist (Ort, 2013: 3).

As Ort further contextualizes, early twentieth-century Czechoslovakia, following the end of Austria-Hungary rule, was a relatively liberal, diverse, and democratic state in Europe, and Čapek hoped to nurture, rather than disrupt, the democratic possibilities of Czech independence (Ort, 2013: 200). As a result, the Čapek generation was understood as less revolutionary, with more of an emphasis on relativism, plurality, and acceptance.⁶ Unfortunately, this reading of Čapek's politics as 'moderate'—particularly as resulting from his embrace of pragmatism—has continued to shape recent accounts of Čapek's work and legacy.

While Ort's study convincingly situates the artistic character of the Čapek generation and provides an essential account of its overlooked influence, his explanation of its founding pragmatist philosophy as resulting in a moderate politics

⁶ Ort explains further: 'At a time when many of their modernist counterparts were turning to fascism or communism, the writers and artists around Čapek resolutely opposed the radical political alternatives of the left and right and steadfastly defended the Czechoslovak state's fledgling democracy' (Ort, 2013: 3).

that emphasizes the 'relativity of all life values' misses an opportunity to rethink the influence of this school of thought on Čapek's work. Similar accounts of pragmatism have been repeated by other close readers of Čapek's writing, and they further obscure the possibility of reading the indeterminacy that structures *The Absolute at Large*. For instance, Michael Henry Heim has also accounted for Čapek's legacy (and lack thereof) in these terms:

Why then did he virtually vanish from the literary horizon? The main reason, I would argue, is that the times called for a less temperate voice than his. His basic position was one of pluralistic acceptance, the commensurability of opposing views ... Not that Čapek's relativism by any means extended to an acceptance of National Socialism. Since the Nazi regime was totalitarian, it excluded pluralist thought by definition, and if only for that reason was anathema to him. His last major novel, *War With the Newts*, can be read on one of its many levels as a brutal satire of Hitler and his policies, and he was so demoralized by the German takeover that several months later he succumbed without resistance to a bronchial inflammation (Heim, 2002: n.p.).

It is a common distortion to read the critique of positivistic knowledge that emerged through some veins of sociology and philosophy (such as pragmatism) in the early decades of the twentieth century as 'relativistic' or 'temperate' or even as a kind of uncritical 'pluralism' (or its opposite, the 'commensurability of opposing views'). Furthermore, the quality of mild temperance does not align with accounts of Čapek as a person, who wrote numerous political essays at a time when he knew it put his life in danger. Well known for their outspoken critiques of fascism, Karel and his brother and close collaborator, Josef, were among the highest priority targets of Nazi forces when they invaded Czechoslovakia in 1939.⁷ Accounts of Čapek's politics that imply 'mild temperance' or moderate acceptance need revision.

⁷ Josef was taken prisoner almost immediately in 1939, and he died in the Bergen-Belsen concentration camp in 1945, shortly before the camp was liberated. Karel died in 1938, just before Germany's invasion, and, in nearly all accounts of his death, it is claimed (even if in mythical terms) that he

The critique of positivism that was articulated by theorists such as Weber and James should not be understood as resulting in simplistic relativism or in a specific politics. Rather, a pragmatist account of knowledge would claim that entities (concepts, objects, institutions) gain validity, in part, by the way in which they allow us to operate in the world. Instead of having intrinsic epistemological and ontological value, their ability to make us particularly effective and to coordinate our perceptions and actions are dependent on historically and culturally specific values and contexts. Max Weber, for instance, gives us his account of science through several instructive examples in his widely influential lecture, 'Science as a Vocation', published in 1919:

Consider jurisprudence. It establishes what is valid according to the rules of juristic thought, which is partly bound by logically compelling and partly by conventionally given schemata. Juridical thought holds when certain legal rules and certain methods of interpretations are recognized as binding. Whether there should be law and whether one should establish just these rules—such questions jurisprudence does not answer. It can only state: If one wishes this result, according to the norms of our legal thought, this legal rule is the appropriate means of attaining it (Weber, 1946: 144–5).

The ideas and values that help determine 'if one wishes this result' (i.e. the larger social structure that supports the institution) are shaped by specific historical and cultural contexts (also described as 'value spheres' and 'our ultimate position towards life') external to the operating logic of the field itself. Weber's account of specialized fields of knowledge (including science) emphasizes their reference to and reliance upon the cultural determinations ('value positions', 'various orders', 'value-spheres', etc.) of a larger historical context in which they have meaning and relevance for intervening. This stands in sharp contrast to positivistic schools, which make strong

willingly succumbed to an illness after seeing his principles obliterated by the Munich agreement and the advancing Nazi forces.

claims about intrinsic value and the corresponding representational accuracy of scientific statements about reality.

Rather than a case for the passive acceptance of all viewpoints, such observations by Weber and the pragmatists were focused on making complex distinctions about the cultural and historical conditions of knowledge-making and truth claims. Their work suggests that it is neither possible or even desirable to completely integrate all epistemological or ontological frameworks—there remains inherent incommensurability. While this does imply a pluralistic understanding of knowledge and value frameworks, it does not result in a simple relativism or acceptance. Rather, it demands a more rigorous investigation of truth claims within the larger context of their production. Through work such as this, pragmatists helped establish a foundation for constructivist accounts of knowledge and science developed in fields such as sociology during the rest of the twentieth century.

I will argue here that the radical indeterminacy at the heart of *The Absolute at Large* becomes visible if we begin our reading with a more precise understanding of the pragmatist philosophy that informed Čapek's work. Rather than interpret the Absolute's indeterminacy as an expression of temperance or relativism, I read it as a denial of positivist insistence on ontological stability and intrinsic meaning. Similar to the Weber example above, a pragmatist framework underscores contextual dependence, and the indeterminacy of Čapek's Absolute makes a clear claim that the significance of material abundance only emerges within specific techno-social collectives. In other words, energy abundance is not a material condition that necessarily creates utopian settlement, as most free energy scenarios imply. Rather, as we will see, the 'Absolute' is continually refashioned and redefined in relation to the social context where it arises and which it continues to transform. Free energy, in Čapek's hands, only emphasizes the impossibility of separating nature and politics.

'Absolute' Indeterminacy

When Bondy and Marek first consider the possibility of free energy in the world, they voice all the hopes connected with similar narratives of miraculous production, perpetual motion, super-abundance, and unlimited resources—free energy will solve the systemic and persistent problems of material deficiencies and imbalances in

human societies along with the social ills they create. However, the presence of the other side of the Absolute—the active God—introduces an unknown element into this picture:

Bondy, my Karburator is a terrific thing. It will overturn the whole world, mechanically and socially. It will cheapen production to an unbelievable extent. It will do away with poverty and hunger. It will some day save our planet from freezing up. But, on the other hand, it hurls God as by-product into the world. I implore you, Bondy, don't underrate what it means. We aren't used to reckoning with God as a *reality*. We don't know what His presence may bring about—say, socially, morally, and so on. Why, man, this thing affects the whole of human civilization! (Čapek, 1922: 30, emphasis in original).

This inherent indeterminacy of the double Absolute—the inability to know in advance and predict the outcomes of evolving techno-social conditions (and the follies of those who try)—provides the dramatic substance of the plot. As Bondy and Marek puzzle over the reality of this energy, they come to understand it as an 'inscrutable and unresting power', an endlessly creative force that does not necessarily have a telos or a predictable outcome:

One might put it this way (only as a hypothesis, of course), that before all things the Absolute existed in the form of an Infinite Free Energy. For some cogent physical or moral reason, this Free Energy began to be creative. It became Working Energy, and following the laws of inversion, it was transformed into a state of Infinite Imprisoned Energy. It lost itself somehow in its own handiwork; i.e. it created matter, and remained there latent, as if under a spell. And if this is hard to understand, I cannot help you. And now, apparently as a result of the perfect combustion effected by Marek's atomic motors, this imprisoned energy was liberated, freed of the fetters of matter which had held it fast. It became once more Free Energy or active Absolute, as free as it was before Creation. It was the sudden release of that same

inscrutable and unresting power which had already manifested itself once in the Creation of the World (Čapek, 1922: 111–12).

This speculation about the nature of the Absolute (narrated by an unidentified 'chronicler' of the novel) suggests an ongoing creative energy that is a world-making force, but one that also becomes directed by the landscape it continually alters. The dynamics of how and why the Absolute coalesced cannot be fully recovered, and the knowledge of where it is headed cannot be precisely predicted. Whatever it is, the Absolute is a force that brings certain formations into being and operates by a logic that changes along with the conditions it encounters and reshapes. The narrator maintains this careful delimitation of claims about the Absolute's inherent nature throughout the novel.

It is significant that the invention of the Karburator (as well as the scientific discovery that results in the creation of *roboti* in *R.U.R.*) comes to light during the most arbitrary, even accidental, sequence of events. Čapek devotes considerable narrative time to explaining how Bondy finds Marek's small advertisement in the paper. After tossing aside his newspaper, Bondy pauses: 'Something was fidgeting him and would not let him rest. He traced it back to the last page of this discarded newspaper. It was the syllable TION, only part of the word, for the fold of the paper came just in front of the T' (Čapek, 1922: 2). Bondy becomes fixated on this detail and the possibilities of the word it was attached to: 'Well, hang it, it's probably IRON PRODUCTION ... or PREVENTION, or maybe RESTITUTION ... But that's nonsense: who would advertise the RESTITUTION of anything? More like RESIGNATION. It's sure to be RESIGNATION' (Čapek, 1922: 2). Being in a particularly restless mood, Bondy decides to track down the TION: 'With a touch of annoyance, G. H. Bondy spread out the newspaper to dispose of this irritating word. It had now concealed itself with provoking ingenuity' (Čapek, 1922: 2). After carefully combing over the text, following the columns in different directions with his finger, folding the paper to retrace his steps, he eventually tracks down the word 'Invention'. Far from a scientific progress narrative or an episode of divine providence, the absurdity and length of this scene discloses the random (at times

cloddish) predilections and actions that lead to the initial alliance between Bondy and Marek and the subsequent distribution of Karburators. In other words, Čapek's humor works against a reading of human mastery or fate regarding the invention of the Karburator.

The indeterminacy of the Absolute's significance—in regard to its originating causes and its future effects—also plays out at the level of discourse. Čapek relentlessly combines, without resolution, opposing tropes of disease and healing, salvation and damnation, ecstasy and insanity, as the narrative voice (which shifts in focalization between Bondy and the chronicler) struggles to decipher the Absolute. For instance, when first observing a running Karburator, Bondy fumbles to describe it: 'That apparatus of yours produces something, ah ... Er ... Something like ozone, doesn't it? Or more like a poisonous gas ... some sort of illuminating gas or paradise gas, or phosgene or something of the sort' (Čapek, 1922: 18). The effects of this 'ozone' on those it touches are similarly ambiguous: 'That tormenting bliss, that tremendous security, that terror, that overwhelming feeling of devotion, or whatever you like to call it' (Čapek, 1922: 17). At times the Absolute is described as a 'physical epidemic' (perhaps a 'nervous disease'), and 'it is simply appalling how quickly it spreads'; yet those affected by its power also perform acts of healing. It is at once a 'monstrous' and 'miraculous' energy (Čapek, 1922: 57, 23, 23–4). Čapek also mixes industrialist and religious discourse, as he is known to do in his other works of fiction, inhabiting various voices to mix incommensurable registers for satirical effect. The narrator notes, for instance, that factories across the world were manufacturing the Absolute (God) on the assembly line, that the Absolute was 'God in a chemically pure form', and that the limitless energy of the Karburator enabled 'divine mass-production' (Čapek, 1922: 25, 117).

In addition to this continuous play at the level of language, the indiscriminate nature of the Absolute disrupts meaning within the story itself. About halfway through the novel, in a meeting among the world leaders to deal with the difficulties that the Absolute is creating for them, the conversation quickly digresses into an argument about the true character of the Divine. For instance, the American Ambassador claims: 'In my country... he is a real big sportsman. He goes in for all

sorts of games ... He's a socialist'. The English Premier counters: 'In my country He strikes one as much more of a Conservative ... I think He is opposed to the Liberals'. The ambassador from Russia asks, 'What are you talking about...? He's a Russian, a genuine Russian, a Slav. With a great Russian soul' (Čapek, 1922: 164–5). Since the Absolute has an unlimited amount of power to support the industrial and political campaigns wherever it is produced, its character is continually reinterpreted in alignment with its context.

When applied to the realm of manufacture, the Absolute similarly absorbs the ideals of the environment it enters and creates an ethos of indiscriminate material growth: 'The Infinite Energy which had once busied itself with the creation of the world apparently took cognizance of the altered conditions, and flung itself into manufacture. It did not form something out of nothing, but made finished goods out of raw material ... It took its place at the machines. It became the Infinite Artisan' (Čapek, 1922: 113–14). Again, the Absolute is an undirected creative impulse that, in turn, becomes guided by the shape of the social and material landscape it inhabits.

Čapek develops his critique of capitalist production in a long scene depicting the Absolute's appropriation of a tack factory. It is difficult not to read this episode as a reference to Adam Smith's exposition on pin manufacture in *The Wealth of Nations* (1776), which stands as Smith's opening example for a theory of the division of labor, distribution of wealth, and self-regulating markets.⁸ With Čapek's satirical treatment, however, all of Smith's formulations are overturned as the Absolute takes control of the tack factory:

⁸ See Smith (1904), Book I, Chapter I, 'Of the Division of Labor'. In concluding his example of the pin-maker, Smith writes: 'It is the great multiplication of the productions of all the different arts, in consequence of the division of labour, which occasions, in a well-governed society, that universal opulence which extends itself to the lowest ranks of the people. Every workman has a great quantity of his own work to dispose of beyond what he himself has occasion for; and every other workman being exactly in the same situation, he is enabled to exchange a great quantity of his own goods for a great quantity, or, what comes to the same thing, for the price of a great quantity of theirs. He supplies them abundantly with what they have occasion for, and they accommodate him as amply with what he has occasion for, and a general plenty diffuses itself through all the different ranks of the society' (Smith, 1904: n.p.).

The Absolute constantly emanating from the atomic motor learnt the whole process of manufacture in a single day, by virtue of its innate intelligence, and flung itself with all its uncontrollable energy, or, perhaps, ambition into this occupation. It began to manufacture tacks on its own account. Once started, nothing could stop it. Without anyone in control of it, the machine vomited forth tacks. The supplies of iron ready to be manufactured into tacks raised themselves of their own accord, one piece after another, thrust themselves through the air and inserted themselves in the proper machine ... When these supplies were exhausted, iron sprouted out of the earth; the ground around the factory exuded pure iron as if it were being drawn by suction from the depths of the earth (Čapek, 1922: 114).

While this scene may suggest a utopian fantasy of the elimination of labor by automation, the boundless material production enabled by abundant energy—potentially understood as ‘ambition’ in the context of capitalist production—produces its own kind of abomination that unnerves the chronicler:

But how am I to describe the frightful, silent struggle which forced iron to raise itself from the depths of the earth, which pressed it into bars, threw these into the machines, and smashed them up into tacks? ... All contemporary reports speak of the horror of the scene. It was a very miracle, but do not imagine that a miracle is something fabulously easy and effortless (Čapek, 1922: 115).

With its ‘uncontrollable’ energy driving production, the Absolute becomes a destructive force in the context of ‘modern society’, as the Bishop had warned. In the tack factory, for example, it produces mounds of metal tacks so enormous that it wrecks the global market for tacks, breaks down distribution chains, and creates a new form of labor needed to haul away the excess product. The chronicler relates a new meaninglessness produced by the limitless energy of the Absolute in the context of capitalist production: ‘When you stood before that avalanche of tacks,

what you saw was not tacks—relatively useful objects—but something perfectly valueless and senseless in its profusion, something as purposeless as are the stars in the sky' (Čapek, 1922: 120–1).

In a very short amount of time, the Absolute has collapsed the possibility for shared meaning and pushed an ethos of capitalist production towards its own unraveling. Rather than utopia, unexpected consequences arise through the continual reorganization of social, technical, and material conditions occasioned by the arrival of the Absolute. As the Bishop predicts early in the novel, the organizing systems of Bondy's 'modern society' begin to break down. Appropriately beginning at the coalmines, violence ripples through all sectors of society:

In England alone there are nine hundred thousand coal-miners out of work. There has been a rising in the Belgian coalfields; about four thousand killed. More than half the mines in the world have ceased working. The surplus petroleum in Pennsylvania has set the oil-fields ablaze. The fire's still raging ... The Chairman of the Mining and Smelting Company has shot himself. The Stock Exchange has simply gone mad. We stand at 8,000 today in Berlin. The Cabinet is in permanent sitting, and wants to proclaim a state of siege. This isn't an invention, Chief, it's a revolution! (Čapek, 1922: 55–6).

Very soon after the Absolute takes over manufacture, war erupts across the globe and national leaders fail to adequately respond in any way. Only a very small human population remains at the end of the novel.

Conclusion

I read the 'indeterminacy' of Čapek's Absolute as a pragmatist critique of utopianism and material determinism, as the significance of God/free energy/abundance only emerges within the specific society that brings its power to use. Is the Absolute a 'poisonous gas' or a 'paradise gas' (Čapek, 1922: 18)? Does it cause nervous disorder or spiritual communion? Does it create terror or security? Is the Absolute a socialist or a conservative? Even in the case of unlimited energy—the object of innumerable utopian fantasies—its significance, meaning, and material consequence is not

available outside of a specific social context. There is, perhaps, no better illustration of this point than one given by William James himself, in a personal correspondence dated 1910 (to which Čapek would not have had access). In the letter, James discusses the significance of energy channeled by a hydraulic ram, a mechanical pump that creates energy by moving water from a lower to a higher elevation using only the force of flowing water. He writes:

You tempt me to offer you another illustration—that of the *hydraulic ram* (thrown back to me in an exam as a “hydraulic goat” by an insufficiently intelligent student). Let this arrangement of metal, placed in the course of a brook, symbolize the machine of life. It works, clap, clap, clap, day & night, so long as the brook runs *at all*, and no matter how full the brook (which symbolizes the descending cosmic energy) may be; and it works always to the same effect, of raising so many kilogrammeters of water. What the *value* of this work as *history* may be, depends on the uses to which the water is put in the house wh. [sic] the ram serves (Monteiro, 2007: 164, emphases in original).

For James, even if the ram channels an abundance of energy (‘no matter how full the brook’), the significance of that energy is still determined in relation to how it is used ‘in the house which the ram serves’.⁹

Both James's and Čapek's pragmatist critiques of free energy align with Timothy Mitchell's argument against various forms of ‘energy determinism’ and their simplified separation of nature and politics.¹⁰ In the concluding pages of *Carbon Democracy*, after having traced multiple iterations of how the material formation of specific energy infrastructures were historically significant to the evolution of

⁹ A full examination of these correspondences is included in my manuscript *Imagining Free Energy: Fantasies, Utopias, and Critiques of America*. A preliminary analysis can be found in Badia (2014b).

¹⁰ See Mitchell's discussion of ‘energy determinism’ as made through an engagement with Bruno Latour (Mitchell, 2013: 238–9).

American democracy, Mitchell is careful to avoid the larger conclusion that the energy supply determines a corresponding politics. As he writes:

What kind of politics might follow from the declining flow of oil and other fossil fuels? Many attempts to answer this question fall into some kind of energy determinism, as though each form of energy produces a corresponding politics. Greenpeace proposes building a decentralised energy system, dispensing with the electrical grid and turning every building into a generator of heat and power. By reducing the influence of large power and energy firms, the organization argues, "decentralising energy would also democratise energy". Desertec, a project backed by Deutsche Bank and other European investors to build giant solar thermal power stations in the Sahara, disagrees, arguing that the circum-Mediterranean network it proposes to build is an effective market device, allowing price competition and the increased use of renewable sources, creating a path to "the democratization of energy". These projects and the arguments that support them indicate not that forms of energy determine modes of politics, but that energy is a field of technical uncertainty rather than determinism, and that the building of solutions to future energy needs is also the building of new forms of collective life (Mitchell, 2013: 238).

While the phrase 'technical uncertainty' is used only three times in *Carbon Democracy*, I read the entire study as working toward this account of energy's relation to social and political formations. In another example, Mitchell demonstrates that the (ever) ongoing reorganization of socio-technical formations involves the emergence and foreclosure of political agency in unexpected ways. One of Mitchell's most compelling historical arguments claims that the physical infrastructure of the coal industry enabled the assertion of labor rights in a way that profoundly affected twentieth-century American democracy. As Mitchell explains in the first chapter of *Carbon Democracy*, the geographic concentration and location of coalmines created the possibility for coalminers to assemble and assert labor rights by striking and

blocking the narrow material channels by which coal was extricated and transported. 'Political possibilities', he writes:

Were opened up or narrowed down by different ways of organising the flow and concentration of energy, and these possibilities were enhanced or limited by arrangements of people, finance, expertise and violence that were assembled in relationship to the distribution and control of energy (Mitchell, 2013: 7–8).

How could it have been predicted in advance, for instance, that the infrastructures built by coal would open a new form of political power for labor unions? For Mitchell (as well as Čapek) evolving socio-technical worlds are always sites of technical uncertainty that undergo continual renegotiations.

With Mitchell's analysis in mind, then, we can assert that Čapek's commentary emerges in his doubled Absolute, a figure for the indeterminacy inserted into the promise of abundance. In the same moment that Bondy and Marek dream that the Karburator 'will do away with poverty and hunger', they also fear the inherent uncertainty of dealing 'with God as a reality'—that is, with a powerful but ultimately unpredictable force of transformation. Čapek's pragmatist framework—which underscores intrinsic contextual contingency—informs my reading of the indeterminacy that structures *The Absolute at Large*: the Absolute's identity is continually reinterpreted given its context; it defines its own power given the conditions of the landscapes it enters and continues to transform; its future effects cannot be fully known or predicted in advance. It remains, in part, an 'inscrutable and unresting' force (Čapek, 1922: 12). In this way, Čapek's Absolute indeterminacy aligns with Mitchell's technical uncertainty in its emphasis on the on-going, co-determining transformation and of material flows of energy and social collectives. As Mitchell writes:

[i]n introducing technical innovations, or using energy in novel ways, or developing alternative sources of power, we are not subjecting "society" to

some new external influence, or conversely using social forces to alter an external reality called “nature”. We are reorganising socio-technical worlds, in which what we call social, natural and technical processes are present at every point (Mitchell, 2013: 239).

To return, then, to the Bishop's provocation early in the novel—why would the world not tolerate an active god?—Čapek's answer may be something like this: the material world does not simply shape itself around the idealized projects of humanity, and, conversely, abundance does not provide a social vision. ‘Energy’ is not ontologically given outside of the forms of collective life that put it to use in and on the world.

Competing Interests

The author has no competing interests to declare.

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How to cite this article: Badia, L 2019 The Absolute Indeterminacy of Karel Čapek's Science Fiction. *Open Library of Humanities*, 5(1): 59, pp. 1–25. DOI: <https://doi.org/10.16995/olh.130>

Published: 13 September 2019

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