

The Neoliberal Nostrum: Spatial Fix in Ian McEwan's *Solar*

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Abstract

Ian McEwan's *Solar* has been the subject of many a debate, mostly due to its controversial representation of climate change's cause and the solution offered for the global disaster. The paper explores the novel's judgment over climate change's fountainhead and the protagonist's vain project to save the earth. The scope of the study encompasses the narrator's accounts of the characters and events in the story. In the light of David Harvey's notion of 'spatial fix,' the study, through a close reading of the novel, focuses on the context within which the story unfolds in order to elaborate on the transformation of the earth into a globalized monolithic built environment called 'the planet' for the sake of efficiency and free flow of capital and commodities. It also argues that the protagonist's solar energy generation project is a neo-liberal initiative to replace a less lucrative production mode and tackle the system's critical spell of over-accumulation, rather than global warming.

Keywords

Built Environment; Climate Change; Capitalism; Spatial Fix; Neo-liberalism.

1. Introduction

Ian McEwan's *Solar* has absorbed many a critic in the realm of environmental humanities since he promised the release of a climate change novel. *Solar* examines climate change issues and the human endeavor to face or prevent greenhouse effect consequences, leading to devastating upheavals. Since its release, the story has been receiving mixed responses. Some praise the novel as a brilliant satire on contemporary man's pathetic attempt to find a way out, but some roundly criticize it as an allegorical story that hardly fits into the genre of eco-fiction. The novel evaluates the implementation of a project to build a

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cutting-edge generation of a solar power station. The story ends with the collapse of the project, mainly due to the protagonist's moral failures.

Five years before the publication of *Solar*, McEwan had a six-day expedition to the North Pole with some scientists and journalists. He wrote a short essay on the experience and briefly told the story of a boot room where they used to get changed to go out to the environment in a temperature of -30° C. McEwan criticizes that how a group of elites who mess up the boot room can "save a planet many times larger" ("A Boot Room"). He concludes that humans are "flawed creatures." For this reason, he argues that "all boot rooms need good systems." It is interesting that the protagonist of *Solar*, Beard, had the same trip to the Arctic. Accordingly, it can be argued that the story may imply Beard could not complete his ambitious project due to an imperfect system, so the question can be generalized thus: what is a sound system? One of the leading contemporary thinkers who has critiqued various outlooks towards climate change is David Harvey. As a Marxist thinker, he believes that the problem lies in the whole neoliberal system, not merely in individuals' inappropriate environmental behaviors. His contention has taken root in Marx's historical materialism based on which capitalism will face a complete collapse after applying a sequence of production modes. Harvey believes that Marx failed to develop the spatial facet of his historical material. He has thus focused his whole scholarship on rewriting Marx's critique of capitalism from a geographical perspective. Using Harvey's theory of spatial fix, one can analyze and judge the soundness of the system in which Beard, as a scientist, implements his project of saving the planet.

Having provided a general overview of McEwan's *Solar* and a brief conceptualization of the theoretical relevance of Harvey to the study, the present paper attempts to explore the novel in terms of David Harvey's notion of 'spatial fix.' Having taken a concise overview of the scholarly studies of the novel in the Literature Review section, it delineates, in the Theoretical Framework section, the import of concepts, including liberalism, neoliberalism, capitalism, globalization, and the dynamism of a capitalist system and their reciprocal relationship to space. A close reading of the novel regarding spatial fix is provided in two parts in the Discussion section. This section addresses and tries to respond to the following research questions: In what cultural or economic setting is the story contextualized? What is the spatial facet of the setting like regarding Harvey's idea of 'built environment'? How can Beard's solution to climate change be read based on Harvey's notion of 'spatial fix'? What prescription does McEwan/Beard offer for climate change? To what extent does the novel disparage neoliberalism – as the backbone doctrine of capitalist systems – and its part in the emergence of climate change? The first part details the spatial context within which the story is

narrated in terms of Harvey's idea of 'built environment,' the concept which is incorporated in the notion of 'spatial fix.' The second section firstly analyzes Beard's initiative to address climate change. The final section of the paper summarizes what was investigated in the previous sections and includes the major findings of the study.

2. Literature Review

Solar, as a work of climate fiction, has attracted many scholars. Kogan Ilany, in his "Ian McEwan's *Solar* through a Psychoanalytic Lens," has done a Freudian study of the novel's protagonist. However, plenty of papers and reviews have been written regarding McEwan's representation of climate change in the book. David Fevyer studied the novel's scientific characters and argued that technocratic self-confidence dominated the current discussion over climate change solutions. Interestingly, Elisa Bolchi, in "An Air-conditioned Global Warming. The Description of Settings in Ian McEwan's *Solar*", sought to address the spatial descriptions in the novel but failed to reveal how well landscapes are juxtaposed in a narrative fabric. Nonetheless, she developed an awareness of the novel's central issue.

Caracciolo et al., through a linguistic study of metaphoric language in *Solar* and two other climate novels, concluded that McEwan used metaphoric paranarrative to compose a strong criticism against human, science, and their efforts to tackle climate change. In addition to Caracciolo, Evi Zemanek analyzed the ironic and allegorical language and characterization in the novel. She concluded that the novel is more a risk narrative than an apocalyptic work. However, Carmen Borbély's "Post-Gothic Traces in Ian McEwan's *Solar*" showed that although its subject is optimistic for its analysis of a promising solution to global warming, *Solar* suggests gothic folds, too.

Chris Maughan focused on the role of fiction in his article "Collective Unconscious: Climate Change and Responsibility in Ian McEwan's *Solar*" and examined what the novel can do to the issue. Moreover, he maintained that *Solar* shows the significance of a personal sense of responsibility and social responsibility. Robert Dormer's "Ecocriticism as Literary Lens & Novels as Instruments of Environmentalist Reflections on Don DeLillo's *White Noise* & Ian McEwan's *Solar*" investigated whether literature can make any significant environmental and behavior changes and how the uses of society/nature binary can affect such potentiality.

Critical literature available on *Solar* has not focused on capitalism's spatial dynamism in the story. This paper tries to address the absence of a spatial-oriented study on the novel by applying Harvey's theory of spatial fix as a critical tool. While the usage may show some weaknesses, it does offer a fresh

perspective on the novel and will attempt to create a new interdisciplinary area among literary criticism, economics, and human geography.

3. Theoretical Framework

Harvey defines spatial fix through the tenets of neoliberalism. Liberalism and neoliberalism are frequently used as vague terms, nearly all of their definitions share a nucleus, namely the priority of individual liberty over the government. Defining liberal humanism, Toni Davies highlights the reciprocity between liberty and spontaneity (40). Both liberalism and neoliberalism are derived from the enlightenment jargon of 'liberty,' which Davies defines as "the Miltonic and Rousseauist complexion of radical enlightenment, with its discourse of individual rights and freedoms, guaranteed by reason and natural law" (40). Hence the crux of neoliberalism has placed a contradictory coupling, i.e., liberty and spontaneity, although it is expected to have been cultivated in the reign of rationality. Neoliberalism has demonstrated a remarkable capacity to understand the compulsions of what Marx later called capitalism, and Harvey highlights it as neoliberalism.

The vagueness of liberalism, in practice, emerges while the degree of and limits of government's interventions are being defined (Ree & Urmson 206). There exists a sibling relationship between liberalism as a political doctrine and its economic manifestation, i.e., laissez-faire, which is also "a founding doctrine for capitalism" (*The Condition of Postmodernity* 103). Having a long, geographically complicated history with expansive definitions, capitalism can be defined, not strictly, as a system that embraces the production modes financed, owned, and run by the private sector, in an intensely competitive situation, with the least government intervention, for the sake of capital accumulation. Here is a point of contradiction concerning the absence of state interference in the market. Under 'let it do,' state control is reduced to the minimum so that the capitalists can develop the best in a democratic atmosphere. On the other hand, liberalism has interestingly had a lifelong oscillation between conservatism and socialism. The latest of such oscillation was John Rawls's conclusion of rather welfarism: "a liberal state must not only guarantee that all its citizens have an equality of fundamental liberty rights, ... it must also ensure that those who are least well off are assured as good a life as possible" (Ree & Urmson 206). Here is a point of departure from liberalism to neoliberalism since it cannot countenance in any case the government intervening in the market for any groups of people.

Following Hayek's attack on the semi-socialist Keynesian economics, the engulfing transformation of western democracies into neoliberal states, in Harvey's notion, occurred through "the crisis of capital accumulation of the 1970s" (*A Brief History* 27). It was also along with the Pinochet coup in Chile in

1973, the 'Chicago Boys' project, and the economic policies of Margaret Thatcher in the UK after 1979 and Ronald Reagan in the US after 1981 (Munck 62). The transformation, argues Harvey, resulted in the creative destruction, "not only of prior institutional frameworks and powers... but also of divisions of labor, social relations, welfare provisions, technological mixes, ways of life and thought" ("Neoliberalism as Creative Destruction" 3) in such a way that the world witnessed a new order, named globalization. These turning points in the history of neoliberalism are of great moment for this study because, since then, the manipulation of space has changed drastically. Accordingly, a thorough analysis of the context of *Solar* without taking the reverberation of this remarkable global phenomenon would be doomed to failure. Additionally, Harvey has always implied that the most noteworthy case of spatial fix is globalization. This is why spatial fix collocates with globalization in the title of his main writing on spatial fix, say "Globalization and the 'Spatial Fix.'"

Warf defines spatial fix as "the spatial fix – the landscape that capitalism produces during temporary windows of stability – is periodically reworked during periods of crisis" (*Encyclopedia* 64). Jessop explains that it is a "general term that refers to many different forms of spatial reorganization and geographical expansion that serve to manage, at least for some time, crisis-tendencies inherent in accumulation" ("Spatial Fixes" 146). It is of great moment that both of these definitions indicate the temporariness of a fix; Harvey stresses that the problem of over-accumulation, which leads to a crisis, is "at least temporarily relieved either by a temporal shift ... or through a spatial fix" (Harvey *Spaces of Global* 73). The reason is that the system seeks its survival in sequences of crises. This reason can easily justify the destruction of a given spatial fix and the creation of another. Warf and Jessop, highlighting this, stipulate that "capital builds a landscape appropriate to its condition at a particular moment in time, only to destroy it through disinvestment at a subsequent point in time" (Warf *Encyclopedia* 295) to "reduce the turnover time of industrial capital and accelerate the circulation of commercial and financial capital" ("Spatial Fixes" 147). The 'fix' in spatial fix denotes rearrangement of existing landscapes or replacement of some to solve an insuperable problem for the nonce: the neoliberal nostrum of spatial fix.

According to Schoenberger, capitalism, through creative destruction of spatial fix, tries to solve over-accumulation. He notes that "although there is no permanent solution to the crisis tendencies of capitalism, the system does generate some important ways of delaying them or diverting them into reasonably productive pathways" (428). The crises originate from the contradictions within the bowels of the system, so the surplus capital, creating

the over-accumulation, is transferred to the outside adopting the following modes: “(a) developing external markets elsewhere... (b) trading with non-capitalist societies... (c) exporting surplus capital to establish new production facilities, and (d) expanding the proletariat...” (“Spatial Fixes” 149). It would be interesting to examine whether *Solar* is receptive to be read as a narrative of over-accumulation. Developing a telling critique, the paper should specify which of the above modes the story represents and what results they produced.

Harvey contends that the system opts for one of its two choices: either “excess capital can be exported from one place... to build another place within an existing set of space relations” (“From space to place” 5) or “space relations may be revolutionized through technological and organizational shifts that ‘annihilate space through time’” (5). Both of these solutions will end with the erection of “expanded and improved built environments” (Schoenberger 429), which is defined as “the whole suite of physical installations that sustain and enhance the system’s ability to create wealth” (429). Here is the key term to the concept of spatial fix, ‘built environment,’ which Harvey defines as “the totality of physical structures - houses, roads, factories, offices, sewage systems, parks, cultural institutions, educational facilities, and so on.” (“Labor, Capital, and Class” 265). It is a fact in capitalism that capital must be in motion. The present paper considers all mini or massive industrial, cultural, economic, scientific, and urban landscape described in the story as built environments and examines their function in the formation of spatial fix.

4. Discussion

4.1. The Planet: A Neoliberal Built Environment

Space is abstract, slippery, and fluid. It is the propensity of capitalism to harness it through the creation of built environments. Capitalism gravitates to do so since it is “necessary for its functioning at a certain point in its history” (“Globalization” 25). With their full-hearted economic change and resounding aye to neoliberalism, after the quietus of the leftist movements in the 1970s, most states pulled out all the stops to “best be advanced,” for the sake of growth, as remarks Harvey “an institutional framework characterized by strong private property rights, free markets, and free trade” (*A Brief History 2*). To attain such liberation, the whole world had to get rid, by choice or force, of any regulations, state-ownership, and presence of the state in social and economic spheres (Harvey, *Spaces of Global Capitalism 3*), leading to the transformation of the whole world into one giant evened-out built environment, called *the planet*.

McEwan’s *Solar* takes place in this globalized planet since Part One is contextualized between 2000 and 2005, and it is replete with repeated mentions of the planet. For instance, the narrator explains that Aldous “had applied to

work at the Centre because he thought the planet was in danger" (28). The planet evokes the image of a beholder staring at the globe from a spaceship or the Moon. Interestingly, the 1968 NASA Earthrise photograph taken on the Moon is highlighted by Harvey because it "depicted the earth as a free-floating globe in space" (*Spaces of Hope* 13), and since then, it has become "an icon of a new kind of consciousness" (13). The implication of this is when Beard's lover and their daughter, Catriona, "prepared a special early-evening meal, the centerpiece of which was a ball molded by Catriona's own hands," the narrator says, "covered in blue icing with green patches" (262). The earth Beard's daughter has in mind is practically the same as the NASA Earthrise photo, as she says: "This was the earth;" and interestingly enough, they put a candle on top of the meal, "which he blew out in one go" (262), as though it had been the birthday of the planet.

The emergence of this prevailing built environment mirrors globalization, accentuating a world of no borders. This built environment is receptive to the free flow of products across borders so that the failure of Fordism would be addressed (Warf 121). The failure of the Keynesian recipe made 'global capital' released from national constraints and replace, as says Warf, "the Keynesian national 'spatial fix' "with a highly fluid, globalized neoliberal counterpart" (121). The shift of spatial fix, the planet, evokes the notion of Harvey's 'time-space compression.' Harvey defines the term as the "process of annihilation of space through time that has always lain at the center of capitalism's dynamic" (*The Condition of Postmodernity* 293). Accordingly, the setting of the story places it in a globalized world to be reigned by 'green capitalism.' This is what Borbely notes as "a necessary conceptual shift from capitalist globalization ... to a post-anthropocentric emphasis on the possibilities of world-ecology and planet-centered technology" (224). The post-anthropocentrism mentioned by Borbely refers to post-humanism or green politics-which steps beyond humanist ethics and norms in favor of nature or the natural. Borbely's comment about green capitalism is of great significance since it throws light upon capitalism's flexibility in its incorporation of even its adversaries, here eco-politics, so that the system survives longer by reconstituting itself even in the form of its antithesis.

What is more, Jessop notes that "time-space compression involves ... the increased velocity of material and immaterial flows" ("Time and Space" 98). The acceleration of turnover time and a spike in time value is, indeed, the short-term result of the annihilation, as Harvey says, because "there is an omnipresent incentive for individual capitalists to accelerate their turnover time ..." (*The Condition of Postmodernity* 229). This phenomenon is referred, in the course of the story, to anxiety over time: "He was running out of time ... Beard ... could think only of the diminishing hours of his day, and of what he stood to lose. It

was two-thirty and his plane, already one hour late, still lumbered oafishly" (123). Beard's expression of anxiety over time by 'lumbered oafishly' is noteworthy. This feeling is expected on the planet: "there is a tension among the many and varied substantive temporalities of human existence ..." ("Time and Space" 106). Alternatively, the narrator says, "he stayed overnight in Oslo, changed his reservation to a 6 a.m. flight and was *three hours early* into Heathrow" (94) (my Italics). Saving time evokes the capitalist concept of 'efficiency.' Another example is Beard's flight from Trondheim to Oslo, when he acted efficiently, which gave him a feeling of superiority over his North Pole companions: "Beard was booked with a different airline for the onward flight to Oslo. The others had four hours to wait" (94). From a neoliberal standpoint, one is late if s/he does not save time on the planet as "the processes of competition and the extraction of surplus value which led firms to accelerate the turnover rate of capital" (Warf 64). Beard, as an outflow of capital, thus feels subconsciously compelled to reach his destination in the least amount of time.

The formation of the planet through time-space compression, which accelerates the flow of capital, has made temporal and spatial concepts change, bringing about a sense of uprootedness: "thinking of that time, the way one does on long journeys when rootlessness and boredom ... can summon from out of nowhere random stretches of the past" (236). Not only does the sense of uprootedness come from feeling displaced, but it also arises out of a process of evening out everywhere. The narrator describes that "whichever direction his gaze fell, this was home, his native corner of the planet" (127). Besides, it is mentioned in a scene that "travel ... had no stopping point and the continuity of spatial relations suddenly becomes ... a fundamental fact of life" (14). It seems the pain itself is the painkiller, that is, uprootedness relieves uprootedness: the rocking cradle of streets built for the free flow of capital and labor: "it was soothing ... to take once a week the grubby morning train from Paddington to Reading" (26). This is totally justifiable in terms of the system's push for the constant mobility of capital: the more mobile capital becomes, the more capital/wealth is accumulated, then, immobility, home or permanent residence, is not recommended in any degree.

4.2. The Neoliberal Nostrum: Spatial Fix

The creation of a globalized planet started from the Industrial Revolution and the spatial fixes that the system has fabricated since then. The spatial fixes have created an unresolvable conundrum designated by 'global warming,' 'climate change,' 'loss of biodiversity,' 'Anthropocene,' to name but a few. With climate change as its prime focus, *Solar* tries to answer 'what the solution can be.' Before finding a workable solution, the cause must be identified. *Solar*, in many scenes,

makes humans accountable, calling them “the flawed creatures” (93) or saying that even injustice is “a matter of human nature” (93). In his essay, “in The Frozen North,” McEwan argues that “this is how some people end up with three goats and nine hens while others have none” (par. 2) to interpret the mess travelers made in the boot room of the ship they stayed on during the trip to the Arctic. The story’s direct attacks on human nature are accompanied by leniency for neoliberalism. Although Holland agrees that Beard “a man defeated by his own blindness” (12), Garrard argues that the story’s implication is “a convenient untruth that exonerates the fast food and fast fuel industries” (“The unbearable lightness” 181). *Solar* examines science as a solution to climate change. Science is indeed the breathing apparatus for innovation, and entrepreneurship is the prime source of growth. Also, scientific language is to justify the system’s discursive statements the best. This conceptual network boosts more efficient modes of production and block outdated, less efficient ways. While the present overused built environments preserve the status quo, the system, to solve over-accumulation, rises like a phoenix from its ashes by making new built environments including creative destruction and destructive creation. Such creation is impossible without the help of science. The justification for nuclear power plants phase-out and investments in solar power in neoliberal and capitalist systems becomes more transparent.

Solar offers a critical treatment of neoliberalism in an interdisciplinary way. It censures advocates of a less efficient production mode like oil company lobbyists while adhering to Ricardo’s logic of supply and demand and Hayek’s free market. *Solar* contends that the demand for fossil energy must be shifted toward green energies, especially solar energy: investors active in the fossil fuel sector must transfer their finances to clean energies. It seems rational; however, it is not yet specified whether capitalists pull out the new sector in case of any harm to the earth again. The other point is how capitalists with the least accountability for their deleterious investment in oil sectors and scientists, like Beard, whose prime motive is to swindle, will save the earth. The serious point is that Beard does not believe the disaster, and the narrator treats it with black humor. Beard’s only motive is to make cash. Ironic is that Beard tries to save the earth by a theft. It is more convincing to read Beard as the system’s product, which, as Dormer indicates, suggests “as a metaphor for the quite blasé march of modern capitalist consumerism into ecological oblivion” (189). However, such reading cannot exonerate him from his evil deeds but highlights the grave impacts of neoliberal thoughts or a capitalist system on society.

That *Solar* highlights ethics must be taken into consideration. The novel uses ironic language saying from Beard’s point of view that the problem “has to move

beyond virtue. Virtue is too passive, too narrow" (172). He believes reliance on science and rationality is not enough since "all boot rooms need good systems... Good science will serve us well, but only good rules will save the boot room" ("A Boot Room" par. 4), as Hsu argues "McEwan ... tries to open a space for ethics" (326). However, McEwan's emphasis on ethics underscores the failure of human nature. Interestingly, Childs, relying upon Garrard's argument for McEwan's adherence to the Enlightenment, reiterates that McEwan "does not develop Beard's grotesque portrayal into a critique of capitalist consumerism" (78). In the work of Caracciolo et al. it is confirmed that McEwan focuses narrowly on a scientist but not sharply on capitalism's impact (14).

A 'good science' complementary to a 'good system' does end with a spatial fix which "entails a geographical restructuring of capitalist activity ... across the face of planet earth" ("Globalization and the 'Spatial Fix'" 24). To create or find a new energy source, a spatial fix requires exploration, expansion, entrepreneurship, and invention. These steps correspond with the creation of a free monolithic planet. In Beard's view, the need for a spatial fix requires us to recognize greed and self-interest, which are sanctioned as a primary, noble motive in (neo)liberalism. He concludes that people must seek recourse to avarice, rather virtue, since it is the most unquenchable human desire: "we have to welcome into our solutions the ordinary compulsions of self-interest, and also celebrate novelty, the thrill of invention, the pleasures of ingenuity and co-operation, the satisfaction of profit" (172-173). Brown rightly notes that Beard is "a man whose primary interest in global warming is the opportunity it presents to further his own interests" (par. 10). Greed drives the capitalist to accumulate more capital whose most concrete manifestation is money. That is why money is deemed as Beard's only solution. He tells the investors "the answer... is of course exactly where that money, your money, has to flow – affordable clean energy" (173). That is why Beard and his American associate are happy when climate change is approved officially by the UN: "here's the good news. The UN estimates that already a third of a million people a year are dying from climate change" (251). This way, a capitalistic venture can drive the cycle of money to commodity to more money, as Hammer tells Beard: "Sunlight, water, and money make electricity makes more money!" (248). The logic behind these clean energy ventures is "the real catastrophe is not the loss of the planet, but the loss of a financial opportunity" (Kellish par. 11), as discussed earlier that green capitalism renders ecological movements as new opportunities to produce new products and sell them in new markets. A pure hypothetical example is the mass-production of environmental slogan T-shirts for anti-capitalist Earth day rallies by fashion corporations and clothing industries.

Science functions in the dynamism of spatial fix when technology does what business is expected to do, that is, to extend “its reach, build new markets, and attract investment of interest-bearing capital to sustain and enhance its position as a thriving sphere of value and surplus-value creation” (*Marx, Capital, and the Madness* 124). The creation of any spatial fix requires some built environments which are, as Warf notes, “conducive to capital accumulation at given historical junctures” (492). When the cycle ticks over, the moment of over-accumulation, the system needs a new spatial fix. Harvey defines over-accumulation as “an excess of capital in relation to the opportunities to employ that capital profitably” (“The Spatial Fix” 7). It can take the form of devaluation of any capacity to accumulate more capital, as Michael Beard warns the investors that “what they currently made profitable would one day destroy them” (86). He warns the capitalists about the scarcity of petroleum in not-too-distant future, which “first ... the oil must run out ... second, many oil-producing areas are politically unstable and we can no longer risk our levels of dependence. Third ... burning fossil fuels ... is steadily warming the planet” (172). The system’s solution is to provide built environments, which “reduce the turnover time of industrial capital and accelerate the circulation of commercial and financial capital” (“Spatial Fixes, Temporal Fixes” 147) and provide a mass of green energy; the most concrete examples of this are the globalized planet and the new hypocritical worldwide trend towards more production of green energies and localization. This condition can be read in Beard’s justification for his purloining Aldous’s idea: that it was Beard who transformed a raw idea into a commodity (Zwart 202), not his postdoc fellow. In other words, Beard’s theft is easily justified because it is to culminate in profitability.

As “the infamous spatial fix ... offers a temporary window of stability” (Warf *Time-space Compression* 21), it does not heal over-accumulation. It defuses and defers it for the sake of more profit, as Beard says about his pro tem solution: “these are golden days in the global markets ... the revolution has begun. The market will be even more lucrative than coal or oil” (176). Beard, similar to the system, does not bear long-term solutions because “long views pained him” (3), or he did not know “how to take the long view” (3). This is what Harvey names ‘green capitalism’: “some people... naively believe that there is a single bullet technological solution (green capitalism)” (*Marx, Capital, and the Madness* 113-114). The point is capitalism’s disinterest in long scientific views. They must be concise and clear since lengthy ambiguous statements or any sets of dialectics that take time to conclude increases turnover time. However, the creative destruction of older spatial fix and destructive creation of new one does not mean that the older is leveled, for “capitalists ... must continually negotiate a balance

between old investments and the creation of new spaces" (*Warf Encyclopedia* 120) unless previous built environments act as "a barrier to further accumulation" ("From space to place" 6). Beard's opposition to fossil fuels stems from his understanding that they are a barrier to his project of solar energy built environments. His project responds more to the future critical demand for fossil fuel. He knows that the system will soon come to the conclusion that the investment in a new mode of production is vital, as Kenis and Lievens argue that re-inventing capitalism through eco-economy "probably brings to mind markets for all kinds of new green products such as wind turbines, solar panels, organic food, and electric cars" (71). Similar to this is previously discussed as Beard's sense of uprootedness, that mobility relieves Beard's sense of uprootedness. It seems that the system's problem-solving procedure is like the ouroboros, introducing the problem as a solution to itself.

The system, assured of the necessity of investment in new modes of energy production, begins to manipulate the public consciousness, by dint of threats and sophistication, to fabricate pressing needs for seemingly green/clean energy means. In other words, the fix must be actioned under a procedure of commercialization. Beard, Houser says, "falls into a second career of environmental entrepreneurship" (10). Beard's language shows a mild addition of commercial tone; an example is "curing the patient is a matter of urgency and is going to be expensive – perhaps as much as two percent of global GDP" (171). Obviously, intense competition is inevitable in the process of commercialization. Harvey believes that "the fiercer the competition, the more leapfrogging innovations are likely to occur" (*Marx, Capital, and the Madness* 108). That is why Beard's project depends much on the policies of major economic powers, including Europe, the UK, the US, and China. As the narrator, eavesdropping on Beard and Hammer, says: "it also depended on the Chinese, how fast they could move, and how plausibly they could be threatened by the prospect of losing the business" (248-249). The Chinese's response is of concern to Beard because the significant point to newly advanced or developing countries is why they, who are experiencing an industrial revolution (spatial fix) based on fossil fuels, must check their modes of production and shift to another spatial fix which makes them dependent on the Western developed countries again.

The force of completion is mentioned several more times in *Solar*. Aldous tells Beard that "there really isn't much time. We should be doing the basics on solar, before the Germans and Japanese run away with it, before the Americans wake up" (39) or Beard hopes, before leaving the Center for the Arctic, "that one day their Centre would outstrip its American rival in Golden Colorado" (56). Zemanek's argues that *Solar* is a risk narrative "because its protagonist

continually has to make difficult, far-reaching decisions" (56). Harvey states that "the end result of fierce competition ... is monopoly or oligopoly" ("Globalization and the 'Spatial Fix'" 29). The competition between the players becomes cut-throat and head-to-head, at the end of the story, between Beard's company and the British National Centre for Renewable Energy, leading to the confiscation of the invention and the halt of the project at the eve of its completion ceremony. Interestingly, contrary to the implied optimism expressed by Beard's daughter that "he was going to America to switch something on, and when he did, the world would be saved" (262), his project fails, and the new spatial fix backfires.

As aforementioned, a spatial fix has a geographical vector. The built environments for Beard's projects in London and New Mexico needed land. The idea of 'geographical expansion,' 'geographical restructuring,' or 'spatial reorganization' has been suggested several times in the novel. For the site of the solar power plant, "Toby (Hammer) renegotiated and instead of the four hundred acres, bought twenty-five, right by the water source" (246). The justification for the system's expansionist moves, Harvey contends, is "these investments are speculative developments that depend for their profitability upon a certain expansionary pattern of global flows of commodities, capital, and people" ("Globalization and the 'Spatial Fix'" 28-29).

The very use of land for power plants may damage the environment, as Garrard believes that environmental betterment projects in some developed countries have been "achieved by moving damaging industries to developing countries" (*Ecocriticism* 18). The expansion is worldwide and fulfills after it finds its home. Beard's search for a home for the solar power plant site failed in California and China, but at last, it was fulfilled in New Mexico, as argues Harvey that "capitalism ... is addicted to geographical expansion" (24). Also, Jessop says: "Globalization reinforces this tension by making it easier for capital to destroy the local bounties of first and second nature" ("Time and Space" 106). Jessop's comment accentuates, once again, that how globalization, as the capitalist system's new mode of production or spatial fix, can confiscate the planet and whatever it accommodates.

5. Conclusion

According to the narrator's accounts, Beard, as a scientist, purloins his fellow idea of photovoltaics and tries to persuade capitalists to invest in its implementation. The implementation of the project seems very significant as Beard and his American associate introduce it as the most practical solution to provide the whole world with an infinite source of clean energy. While the narrator seeks to show that Beard's only motive to complete the project is

individually making cash – so the problem lies in turpitudes of humans – the essay, with its primary focus on Harvey’s notions of spatial fix and built environment, argues that Beard is just a subject of a system whose only motive is capital accumulation. The article studies science as the system’s central apparatus in its dynamic cycle of innovations in products and inventions in production mode. Science, along with entrepreneurship, helps the system grapple with over-accumulation periods when only a spatial fix can temporarily relieve the crisis. The research demonstrated how new sets of built environments, like Beard’s project in New Mexico, could open new windows to the capitalist system to breathe. It is shown that the story takes place in the era of ‘the planet’: late twentieth century and early twenty-first century transformation of the whole world into a globalized monolithic sphere on which countries have opened their doors to fluid and free flow of capital and commodities. The analysis also clarified the effects of the planet on the consciousness of its contemporary.



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