

Moral Depreciation, Automatic Machinery and Rational Transformation

— Reflections based on Part 4 of *Capital* related to the
Fukushima Disaster Complex —

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I . Moral Depreciation

The ability of human beings to work together and develop the capabilities of their species³⁾ (in German, *Gattungsvermögen*⁴⁾), and the paradoxical phenomena that the collective power of the masses appears as if it originates from the dominating part of society can be understood without any difficulties. The social productive power of modern labor

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2) This article is a revised and expanded version of my presentation in English at the International Symposium: Marx in the 21st century, Hosei University, Japan, Dec. 2018.

3) Cf. Marx (1872), *Collected Works*, Vol.35, P.334.

4) Marx (1872), *Gesamtausgabe*, Zweite Abteilung, Bd.6, S.326.

appears as an inherent property of capital, endowed by nature⁵⁾. Yet, as concerns the matter of the “so to speak, moral depreciation”⁶⁾ (in German, “sozusagen moralischer Verschleiß”⁷⁾) most discussions have failed to understand the implications made about it by Marx. For example, D. Harvey in *A Companion to Marx’s Capital*, (2010) identifies it simply with “economic depreciation”. As we will reject the interpretation of such a venerable writer, we are here entitled to look at a long quotation;

“To begin with, ‘the physical deterioration of the machine is of two kinds. The one arises from use’, and the other from non-use, i.e., it just rusts away. ‘But in addition to the material wear and tear, a machine also undergoes what we might call a moral depreciation.’ I always find this term strange. What Marx really means is economic obsolescence. If I bought a machine for two million dollars last year, and this year all my competitors can buy it for one million (or, what amounts to the same thing, buy a machine for two million dollars which is twice as efficient as mine), then the value of commodities produced will fall, and I will lose half the value of my machine. ‘However young and full of life the machine may be, its value is no longer determined by the necessary labourtime actually objected in it, but by the labour-time necessary to reproduce either it or the better machine’. The threat is that the machine will be ‘devalued to a greater or lesser extent’. To protect against this threat, capitalists are impelled to use their machinery up as fast as possible (keeping it

5) Marx (1872), *Collected Works*, *ibid*, P.338.

6) Marx (1872), *Collected Works*, *ibid*, P.407.

7) Marx (1872), *Gesamtausgabe*, a.a.O.S.393.

employed twenty-four hours a day if possible). This means lengthening the working day (or, as we will see, resorting to shift work and relay systems). Machines supposed to get around lengthening the working day actually stimulate a need to further lengthen it.” (P.210f)

M. Postone, for another example, gave no explanation about this theme in his *Time, Labor, and Social Domination* (1993), while long passages are spent on the description of the related part of *Capital*. The failure common to these writers may come from the fact that they considered only the first volume of *Capital*. When Marx wrote of the “so to speak, moral depreciation”, it must have meant the following three points, when looked at from the viewpoint of the whole construction of *Capital*:

① Paradoxical prolongation of the working day, intensification of labor. “Hence that remarkable phenomenon in the history of modern industry, that machinery sweeps away every moral and natural restriction on the length of the working day.” (*Capital*, vol.1, Karl Marx, Frederick Engels Collected Works, Vol.35, P.411)

② Negligence of safety devices and safety rules against dangers arising from modern technologies and factories, as an economy in the use of constant capital. “In line with its contradictory and antagonistic nature, the capitalist mode of production proceeds to count the prodigious dissipation of the labourer’s life and health, and the lowering of his living conditions, as an economy in the use of constant capital and thereby as a means of raising the rate of profit.” (*Capital*, vol.3, *ibid.*, Vol.37, P.89ff.),

③ Prevention of new developments in science and technology that encourage the preservation of outdated machinery. Investments in fixed capital must be repaid under the capitalistic mode of production. “On the one hand the mass of the fixed capital invested in a certain bodily

form and endowed in that form with a certain average life constitutes one reason for the only gradual pace of the introduction of new machinery, etc., and therefore an obstacle to the rapid general introduction of improved instruments of labour.” (*Capital*, vol.2, *ibid.*, Vol.36, P.173)

Most of all discussions about “moral depreciation” in Japan are also filled with confusion, which has nothing to do with the critical implications made by Marx. This may be due to the prevalent way of thinking which identifies development of productive power simply with mechanization and, social development simply with industrialization. It is worth noting that Kouzo Uno in his *Theory of Economic Crisis* (1953) interpreted the resistance of old fixed capital against new investment in the sense of the third point ③. However he did not explain why Marx had described the depreciation as “so to speak, moral” neither in *Theory of Economic Crisis* nor in *Principles of Political Economy*⁸⁾, perhaps because of his methodological inclinations towards an ‘economic basic theory’ as a closed system of science.

In response to the depreciation of machines, morality is depreciated under the capitalistic mode of production (Depreciation has here two different meanings. Refer to the page 341). Further interpretation of critical implications given by Marx will follow below.

II. Automatic Machinery

In *Capital*, Marx shows that the barrack hierarchy among workmen, foremen, managers and capitalist in the factory are similar to those

8) English translation by T. Sekine, Havester Press, 1977.

among soldiers, sergeants, officers and generals in the army (Cf. *Capital* vol.I, *ibid.*, P.337, 426ff.). The human capability to cooperate and divide labor are replaced with a combined system of machinery. “In handicrafts and manufacture, the workman makes use of a tool, in the factory, the machine makes use of him” (*ibid.*, P.425). The workman is converted into a living appendage of the machine. As a source of special surplus value modern technology combined with sciences had begun to contribute to the explosive growth of national economy. Moreover, sciences and technology were oriented and organized to conform to the interest of capital and nation state (Cf. *Capital*, *ibid.*, P.366ff., 426). Useless knowledge has tended to be excluded and eliminated for the purpose of social reproduction, namely for the dominant interest. Let us have a look at the critical trends after Marx.

1) To begin with, there is the perspective of Weber's general theory of rationalization, especially as it concerns modern bureaucracy. According to his thesis in *Parliament and government in new Germany* (1919) a lifeless machine is congealed spirit. The same spirit is embodied in the living machine of the bureaucratic organization. “Combined with the dead machine, it is in the process of manufacturing the housing of future serfdom. —An official who receives an order which, in his view, is wrong can — and should — raise objections. If his superior then insists on the instruction it is not merely the duty of the official, it is also a point of honour for him to carry out that instruction as if it corresponded to his own innermost conviction” (S.464, S467) . This statement was one of the last stages of his criticism made in his way inside of German imperialism.

2) In Lukács' *History and Class Consciousness* (1923), we can see a combination of both the analyses given by Marx and Weber in his

theory of reification. Note that he extended the scope of these considerations to the dimension of culture, science and philosophy. And Lukács took up Weber's comprehension of ancient technology, wherein ancient slavery is taken as dominant formation of labour that made the development of rational labour and rational technology at those times impossible (S.603). Thus the partial rationality of science/technology and social formation in our age results in total irrationality. However, Lukács' key concept of the 'identical subject-object' towards emancipation was later suspended during the age of totalitarian domination and political labyrinths, and was left in this suspended state until the uprising in Hungary in 1956.⁹⁾

3) Tracing back to the paradoxical problem of social domination over nature and culture, in *Dialectic of Enlightenment* (1944, 1947), Horkheimer and Adorno tried to reveal the origin of enlightenment as well as its real dangers and scarce possibilities. They write: "The fallen nature of modern man cannot be separated from social process. On the one hand the growth of economic productivity furnishes the conditions for a world of greater justice; on the other hand it allows the technical apparatus and the social groups which administer it a disproportionate superiority to the rest of population" (S.14f) . The part designated to political economy was assigned to F. Pollock, but was never completed. Another suggestive passage by Benjamin from *The Work of Art in the*

9) Refer to my article: *Ein weiterer Beitrag zur Diskussion Lukács vs. Adorno* (1) Adornos Erpresste Kritik und deren Hintergrund. Triadische Konstruktion der Hauptwerke Adornos in: *Jahrbuch der Internationalen Georg Lukács Gesellschaft*, 2016 (2) Diskrepanz und der Horizont einer möglichen Konvergenz (forthcoming). Our trial of *Reading Dialectic of Enlighten* is now in progress (Iwanami Shoten).

Age of mechanical Reproduction (1939) may be cited here; “The destructiveness of war furnishes proof that society has not been mature enough to incorporate technology as its organ, that technology has not been sufficiently developed to cope with the elemental forces of society” (S.507). Yet we are not standing at the last step in history, as he imagined in his last writing left behind (*On the Concept of History*, 1940 (S.691ff.)). Dangers were present. We have to remember the fact that the timing of these writings coincided with both ‘concentration camps’ and the ‘Manhattan Project’. In the latter case it is reported that most engineers and workmen at the work of construction did not even know what they were making.

Based on these theoretical documents this article offers a critical model: a complex of techno-bureaucracy and bureau-technocracy as a sort of ‘automatic machinery’ for the interests of capital and nation states. During the last century together with the general tendency toward monopolistic/oligopolistic capitalism the parts of fixed capitals have grown gigantically beyond our normal imagination in everyday life. ‘Moral depreciations’ too have grown abnormally. Nuclear power plant is a sort of synthetic compound of ‘moral depreciation’ and ‘automatic machinery’. And Fukushima Disaster Complex is an apparent collapse of such a perverted construction.

III. Fukushima Disaster Complex

When we consider the arguments found in traditional Marxist economics on the subject of ‘moral depreciation,’ we may remember that Lenin referred to the corruption of capitalism in *Imperialism* (1917). We may also recall the production of extravagance in ‘State Monopoly-

Capitalism' by the members of Uno-school and others. Yet, in order to make use of the noteworthy interpretation given by Uno at the level of 'economic principles' for an 'analysis of the current state' of the Fukushima Disaster Complex, it is necessary to take another moments into consideration, namely its political-military background first. In short, the nuclear power plant is not only part of the energy industry. It is also a sort of gigantic military plant, which produces plutonium as raw material for nuclear weaponry. For a further 'analysis of the current state' we have to count the financial institutions and the electric power companies as monopolistic enterprises which are combined with other psychological, sociological and technological problems.¹⁰⁾

Now that we have gone over these basic presuppositions, we can go back to our theme of 'moral depreciation' and see how it pertains to the Fukushima Disaster Complex. Each of the following three points ①', ②', ③' corresponds to the points ①, ②, ③ in the first part, I Moral Depreciation.

①' Dangerous tasks which cannot be replaced by automatic machinery and technology are entrusted to outsourced workers. (Examples: In Japan there are groups of workmen called 'nuclear power plant Gypsies', who carry out the most dangerous tasks there and move around various plants across the country during their short lifetime. In the face of the Chernobyl Disaster 1986 Russian soldiers were mobilized as 'bio robots'.)

10) Refer to my article, which will be published just ten years after the man-made Disaster: *Hypocenter Region, Nuclear Power Generation and Reactivation* (in Japanese). In: Joint Studies supported by Grants-in-Aid for Scientific Research, Japan Society for the Promotion of Science. (15 H 01850). Touseidou (forthcoming soon).

- ②' In order to make up the 'safety myth' of nuclear power plants and to skimp the necessary costs for safety measures, scientific outcries about the earthquake and tsunami were neglected and prevented by means of dirty politics. In this sense, not only was the disaster at the nuclear power plant man-made, but the disaster following the earthquake and tsunami was man-made as well. (In addition: About the nuclear reactor Mark I imported to Fukushima plant, it was known among American nuclear scientists and Nuclear Regulatory Commission that the design of the reactor had defects. General Electric Company wouldn't recall the defective product, and Atomic Energy Commission and the U.S. Government allowed to export it. As to whether or not the problem was discussed with the Japanese Government, or whether elsewhere in the world this issue had been announced to Japan, it is unknown.)
- ③' The nuclear power plants as fixed capital have been preserved and are now partly going to be re-operated and the development of renewable natural energy has been prevented in many ways in Japan. (Keep in mind that from the beginning nuclear power plants were a sort of reuse of the nuclear weaponry plants and stocks at the age of the 'cold war.' The speech by U.S. President Eisenhower at the United Nations 'Atoms for Peace' 1953 was made to open the gate for the compatibility of nuclear power plants with nuclear weapons used up to the present. This process had apparently begun in India 1974 and in Pakistan 1998.)

The process towards abolishing the nuclear power plants in Germany shows how decisive the point ③ is within the issues concerning 'moral depreciation'. It has often been said that this political decision made by prime minister Merkel should be praised. However, from our point of

view, we cannot agree with this assessment. Based on political actions and social movement throughout past years ex-prime minister Schröder had made a compromise in 2002 with the industrial world to shut down all nuclear power plants in Germany by the end of the 2020 decade. Within these years, the end of depreciation period (normally 40 years) comes around. Afterwards, Merkel had prolonged the period for around 10 years after 2010. Therefore, Merkel's largely praised 'decision' is no more than a return back to the former compromise in regard to the political atmosphere just after Fukushima 2011. Without such a prehistory, the orientation towards new energy politics would have been much more difficult. We find a similar situation in Taiwan. The Taiwanese Government decided to abolish nuclear power plants until 2025. This will be the 40th year after the last plant had started working. The Korean Government declared the gradual abolishment of nuclear power plants in 2017, yet political struggle and opposition to this movement still continue. Such cases happen insofar as already-invested, fixed capital resists new technology and scientific development until it has managed to earn its money back.

In Japan, several dangerous plants are going to be reactivated over a predetermined period of depreciation. Various trials toward renewable natural energy have been obstructed by the oligopolistic system of electric power companies, especially by monopolistic system of power transmission and distribution in each district (point three ③). Investments from abroad were withdrawn from the companies with high accident risk just after the Disaster, and domestic financial capitalists will not renounce any bad loans that have come as a result of it. All these result in the highest electric bill, through governmental intervention. This should be referred to as the depreciation or

destruction of social morality. Of course, it may no longer be necessary to say that Marx used the word 'depreciation' in two meanings. In one sense, Marx used to refer to the social reduction in price in the usual sense of the word. However, he also used it in a critical sense. The latter implicates underestimation, or disregard of morality. Depreciation here is an antonym to appreciation. (In German, 'jemanden für dumm verschleissen' means 'jemanden für dumm unterschätzen' in rather old usage).

"What we may call a moral depreciation" is a sort of 'inevitable' perversion which structurally results from the capitalistic use/disuse of productive means. Furthermore, the components of automatic machinery accept and reproduce it as a 'duty and honour' (II-1 Weber) of their own. Here is the material source of technological retrogression and social/political regression. Capability of cooperation under such a domination shall appear as conspiracy to achieve the destruction of human productive powers.

IV. Rational Transformation

If we were so inclined, we would be able to show many other cases that verify the adequacy of the critical arguments given in *Capital* by Marx. By 'moral depreciation', he referred to the aspect of the destruction of various human capabilities by the capitalistic mode of production through automatic machinery, wherein the possibility of any kind of morality disappears, or, at best, can only appear in a limited manner. The social productive power of labor or the productive power of social labor as a capability of the species is destroyed by capital and the state connected to it, not only through techno-bureaucracy, but also

through bureau-technocracy. In this way, *Capital* (vol.1, Part 4) is to be reread and reconstructed as a foundation for a critical theory in the new formation of science/technology, society and culture. This article would like to call attention here to a rewriting of the second German edition, apart from that of Part 1 “Commodities and Money”. A new annotation says; “Hence in a communistic society there would be a very different scope for the employment of machinery than there can be in a bourgeois society”. (*Capital*, vol.1, *ibid* P.396. In German: “In einer kommunistischen Gesellschaft hätte daher die Maschinerie einen ganz anderen Spielraum als in der bürgerlichen Gesellschaft.”¹¹⁾) This annotation was written just after the uprising and the brutal defeat of the Paris Commune in 1871. Four years before the Commune the International Exposition had been held in Paris in 1867.

Among many scenes told and written about the Commune, the author of this article remember a series of pictures painted by G. Courbet after



Fig. 1 : Gustave Courbet, *Die Forelle*, 1872. Kunsthaus Zürich.

11) Marx (1872), Gesamtausgabe, Bd. 8 , a.a.O.S.382

1872. *Die Forelle* is a self-image of the painter himself, locked up in jail (see Fig.1). Aside from this picture, he had drawn many miserable fishes which were cut up and hung up on the wall. An allegory of the victims in his memory. The short annotation to *Capital* gives us a different impression, so to say, of his scientific confidence and passionate imagination. Liberated from the various perversions motivated by profit and violence, machinery would be able to have different kinds of forms and functions, insofar as socialized producers are able to regulate their interchange with nature in a way worthy of their human nature (Cf. *Capital*, vol. 3 *ibid*, P.807). In the last two centuries as well, there have been various perverted forms of domination, miserable histories and passionate uprisings. We also have experiences of trial, failure and reaction. It is a task of these generations to reformulate the question worldwide: how to break away from perversion, and make our way across automatic machinery to reconstruct the fragile – but sustainable – capability for co-operation?

Here, in order to examine how the depreciation problem changed and continued at the age of ‘neo liberalism’ and globalization, this article will refer to the suggestive book written by Andrew Feenberg, *Questioning Technology* (1999). His well-known trial towards ‘Critical theory of technology’ opened up new theoretical dimensions of inquiry. Expounding the deep ‘democratic rationalization’ of technology he shows various successful cases, such as in environmental movements, the advancement of computer from an information processor into a communications medium and so on. Among these cases, this article will make short comments on the problem around General Motors and AIDS, wherein this rationalization of machinery and technology was not successful.

Feenberg shows one case where the stratified charge engine, developed by Honda in the early 1970s, was not able to gain traction at GM, and the retooling of the engine assembly plants was rejected in favor of merely adding catalytic converters onto cars (ibid., P.219f). This may be observed as *The Reckoning* (title of a book by D. Halberstam 1986). Managers of GM found that they would never lose their customers. In other words, they were so imprudent as to believe that as far as stockholders, and thus those in managerial positions were concerned, maintenance of the status quo would be preferable to an expensive investment in new technology. As a result the pollution control system of automobiles became unreliable. “A considerable portion of urban smog (perhaps 40%) emanates from older vehicles that would burn much cleaner had a different path been followed twenty years ago” (ibid. P.220). This brings us back to points ② and ③ of moral depreciation. And the inadequate choice is one of the complex reasons for the bankruptcy of GM in 2009 and Motor Town Detroit in 2013, which is furthermore a hotbed for insane ex-president and mentalities.

Feenberg traces another case of successful democratization of technocratic medical experimentation. AIDS activists and networks gained access to experiments. “They aimed to bring the organization of medicine into compliance with their human needs as participants in the medical world” (ibid. P.142). However, the story does not end there. Two years later after the publication of the book 2001, at a court of justice in South Africa, a pharmaceutical company which produced AIDS-medicine was requested to disclose the information about the development expense and the time of repayment. The monopolistic company as the plaintiff had to drop the suit. It was after two years

when the production of generic drugs began to be used easier. This is exactly point three ③ of moral depreciation. The road to treatment, recovery and elimination is not yet easy to go forwards because of the continued intervention of the U.S. Government and outrageous patent systems by WTO. Japan and Switzerland joined with this trend.¹²⁾ Even the generic drugs are too expensive for the 'miserables'.¹³⁾ A short passage from *Capital* is to be cited here once more: "It is generally the most worthless and miserable sort of money capitalists who draw the

12) About the problem of gene therapy and patient rights, refer to a relevant article, *How Intellectual Property Reinforces Inequality*, by J. Stiglitz: "At first glance, the case, Association for Molecular Pathology v. Myriad Genetics, might seem like scientific arcana: the court ruled, unanimously, that human genes cannot be patented, though synthetic DNA, created in the laboratory, can be. —The case was a battle between those who would privatize good health, making it a privilege to be enjoyed in proportion to wealth, and those who see it as a right for all – and a central component of a fair society and well-functioning economy. —America has attempted to foist its intellectual property regime on others, through the World Trade Organization and bilateral and other multilateral trade regimes. It is doing so now in negotiations as part of the so-called trans-Pacific Partnership. Trade agreements are supposed to be an important instrument of diplomacy."

13) Deaths amounted to about 2~3 million victims per year during this time. At the global level, it is not well known that the victims of AIDS in recent years amounted to around one million mostly in countries in the global south. AIDS was not eliminated, but was instead concealed and prolonged. The novel COVID-19 virus pandemic can neither be hidden behind, nor localized. So far as the major power authorities in concern are not yet working together, it would be difficult for the present world system to confront with the catastrophes that will result from the forthcoming man-made climate crisis. Refer to my short article in *Shuukan-Kinyoubi*, May 21, 2021 (in Japanese).

greatest profit out of all new developments of the universal labour of the human spirit and their social application through combined labour” (*Capital*, vol 3, *ibid.*, Vol.37, P.106. Economy through Invention). In the age of ‘neo liberalism’, globalization and the floating exchange rate system monopoly/oligopoly and patent system in our contemporary society has transformed moral depreciation from real working ideology into a downright demagoguery that still insists on the patent system as an essential means to incentivize technological research developments.

Of course the concept of ‘democratic rationalization’ may have its wide perspective. Yet it must also take reactionary moments into consideration. Throughout struggles against moral depreciation and regression, the network formation for a slavery free society and culture enable ‘rational transformation’ of automatic machinery and technology. This, in collaboration with critical theories and sciences, is indeed an indispensable background for the development of our human capabilities.

References

- Benjamin W (1939) *The Work of Art in the Age of mechanical Reproduction*,
Gesammelte Schriften I · 2 Suhrkamp
- Benjamin W (1940) *On the Concept of History*, Gesammelte Schriften I · 2
Suhrkamp
- Feenberg A (1999) *Questioning Technology*, Routledge
- Halberstam D (1986) *The Reckoning*, William Morrow & Company
- Harvey D (2010) *A Companion to Marx’s Capital*, Verso
- Hayashi T (2005) *Fight against AIDS*, Iwanami (in Japanese)
- Horkheimer M, Adorno Th (1947) *Dialektik der Aufklärung*, Adorno
Gesammelte Schriften 3, Suhrkamp
- Marx K (1872) *Karl Marx, Frederik Engels Collected Works*, Vol.35, Vol.36,
Vol.37, International Publishers

- Marx K (1872) Karl Marx, Friedrich Engels Gesamtausgabe, ZweiteAbteilung, Bd.6, Bd.7, Bd.8, Dietz Verlag
- Lukács G (1923) Geschichte und Klassenbewußtsein, George Lukács Werke, Bd.2, Luchterhand
- Postone M (1993) Time, Labour and social Domination, Cambridge University Press
- Stiglitz J (2013) How Intellectual Property Reinforces Inequality, New York Times, July 14
- Uno K (1953) Theory of Economic Crisis, Iwanami (in Japanese)
- Weber M (1919) Parliament and Government in new Germany, Max Weber Gesamtausgabe, Abteilung I, Bd.15, J. C. B Mohr