Post-development and Questions Concerning Technique: In the Time of the Fukushima Crisis

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I. Introduction

The earthquake and tsunami that attacked the northeast Japan on 11th March 2011 seems to have significantly changed the society's conditions of living for the present and future generations. This is because the biggest natural disaster in the history of modern Japan accompanied a high level industrial accident of Fukushima Daiichi nuclear power plants. The evaluation of the accident, based on the IAEA defined International Nuclear Events Scale (INES), soared to the level seven as early as 12th April 2011, the worst standard comparable to the Chernobyl nuclear accident. The Japanese government estimates that it would take more than thirty years to complete the decommissioning of the troubled nuclear reactors. Now that residents near the plant site and the neighbouring communities in Tohoku and Kanto regions suffer radioactive contamination of their living environment. A significant number of farmers and fishermen in the affected areas lost their livelihoods; residents near the plant site were forced to evacuate their home towns and villages with little prospect of returning; and those remaining there, including children, schoolboys and schoolgirls as well as pregnant women, are continuously exposed to the risks and fears of radiation.

The Fukushima accident changed the society's capacity of giving and distributing life chances to its members. It laid bare a situation in which a whole nation has to design their course of life, both individual and collective, with permanent care of managing radiation as well as unequal distribution of

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nuclear-related risks, fears and discrimination. As philosopher Osamu Nishitani remarks, 'the post-March 11 Japan is totally different from the previous period in that the possibility of the future is already constrained by actual and potential risks of radioactive contamination' (Nishitani, 16th July, 2011).

The event of March 11 eventually opened up a space for reexamining and reevaluating the existing Japanese development model. In the wake of the Fukushima accident, academy, journalism and civil society began to discuss the problems of post-war Japanese development model, together with energy shift and denuclearization. For those who are critical of Japanese nuclear energy policy, the Fukushima accident can be qualified as an environmental and social disaster perpetrated by the modernist development projects, which is comparable to big pollutions in Japanese history (Ashio, Minamata and Yokkaichi) and the military base of Okinawa. They problematize the historical structure of post-war Japanese political economy that has hitherto pursued the growth of industrial activities and material wealth at the expense of multifarious victims in the peripheries.

In this context it is not difficult to find an overlap between the current growing concern about denuclearization in Japan and the post-development critique of the paradigm of development. For the Fukushima accident has revealed to Japanese people the structural violence and injustice associated with modernist development projects, which forms and effects one can find in the various cases discussed in the critical and post-colonial development studies literature[1] : psychological and politico-economic dependency of rural economy to urban industry; discrimination and destruction of the livelihood of traditional farmers and fishermen; top-down development policies; deprivation of local cultures; dominance of techno-science; and loss of autonomy. And

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(1) There are already a bulk of monographs and articles related to these fields. I shall introduce only several basic, and relatively recent, works for heuristic purpose. For critical and post-colonial development studies, see, for example, Arce & Long (2000), Crush (1995), Edelman & Haugerud (2004), Gupta (1998), Kapoor (2008), McEwan (2009), Munck & O'Hearn (1999) and Slater (2004).

the post-development critique and its related fields such as anthropologies of development and modernity and post-colonial and subaltern studies have long since investigated the origins and nature of these multifarious problems[2]. What is peculiar to the post-March 11 Japan, however, is that these structural violence and injustice are entwined with the characteristic phenomena of advanced industrial societies of late modernity: what Ulrich Beck calls risk society (Beck, 1992). From Three Mile islands to Chernobyl to Fukushima, nuclear accident illustrates the existence of the incalculable side-effects of scientifically and technologically produced risks in the industrial societies that enjoy material abundance and comfort. In this sense the Fukushima accident urges us to critically examine the model of those technology-based consumerist societies.

We must question the foundation of consumerist societies, and especially its organizing logic and principle, because industrial disasters like Chernobyl and Fukushima illustrate the structural, ethical, limits of modern industrial civilization. Whereas the cultural value of nineteenth century industrial revolution lied in a firm conviction that the development of material production and scientific and technological advancement led to the progress of human societies, the opposite happens in the societies of consumers. That today's advanced industrial societies are exposed to multifarious risks produced by scientific technology and industrial systems suggests that the growth of material wealth is no longer conceived of as a marker of social progress; we are becoming more and more uncertain about the future, losing confidence in what we are actually doing. As Jean-Pierre Dupuy remarks, 'we are today in a totally different situation because major problem is to avoid ultimate catastrophe' (Dupuy, 2010, p. 81, my translation).

The prevalence of risk society thus suggests two things. First, it suggests that we need to abandon the lingering myth of modernization that so-called developed countries represent the ideal model of living. It is needed to recognize

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[2] For the trajectory and summary of the influence of anthropologies of development and modernity and post-colonial and subaltern studies on post-development critique, see Escobar (1995) (2009) and Tommasoli (2004)

that advanced industrial societies are socially and ecologically unsustainable due to a great many risks involved in their economic activities. Second, given that recognition, we need to reexamine and reevaluate epistemological and normative foundations of developmental philosophy: it is needed to reconstruct development ethics, based on the totally different paradigmatic principles from the modernist development paradigm.

In what follows, I examine ethical problems associated with the modern paradigm of development through the lens of post-development critique of technology. Technology is one of the central issues in the post-development literature but it remains less focused in the academic debate on post-development[3]. However, the issue of technology plays a crucial role in understanding the structural and ethical problems of development and also in examining the potential of post-development critique. The second section begins with a short introduction of the post-development critique of technology, followed by an interpretation of Castoriadis' reflection on the ancient Greek concept of technique. In doing so, this section recasts our focus on technology from its modern understanding, i.e. technology as instrument or machine of production, to the authentic notion of technique as practice of constituting the human world. The third section examines the problems associated with modern technology, drawing on Castoriadis' and Aredni's works. The fourth section extends the arguments in the previous sections to the issue of development. Here I develop Latouche's critique of sustainable development with Arendt and argue that the modern paradigm of development exacerbates not only social and ecological but also *political* condition of sustainability. In the concluding section, I make a special remark on the Fukushima crisis and

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[3] For the comprehensive summary of academic debate on post-development, see Ziai (2007). This book contains critical examinations of post-development critique. Contributors, including myself, scrutinize the issues of culture, economy, politics and research methods, analysed and proposed by post-development scholars. However the issue of technology is not discussed as a main topic. Similarly, the aforementioned critical and post-colonial development studies have not worked the issue of technology in the way I develop in this article.

present ethical and political challenges that must be tackled in the study of post-development.

II. Fundamental Questions of Technology: Interpreting Castoriadis' Philosophy

A distinct contribution of post-development critique to the study of international development lies in that it brings to light epistemological and ontological problems associated with modernity and development. Post-development literature offers a historical description of how a trinity of the modern ideas of economy, science and technology gave birth to a productivist political economic regime in the wake of industrial revolution and how these ideas and institutions were globalized through colonization and post-war international development projects (Escobar, 1995; Illich, 1973a; Latouche, 1986, 1989; Rist, 2008; Sachs, 1992).

Post-development scholars explain that the existing economic, scientific and technological ideas and institutions reflect particular values of modern Western civilization. They argue that, by defining the material prosperity enjoyed by advanced industrial societies as a universal goal of humanity, development projects reinforce, on a symbolic level, the supremacy of Western civilization over non-European cultures whilst, in practice, destroying cultural and ecological diversities in the post-colonial world through the programs of modernization and neoliberal globalization.

Critique of technology is of singular importance for post-development, as it illuminates the fundamental problem of development more clearly than those critiques associated with science and economy. This is because, in some of post-development literature, the issue of technology is examined in its authentic theme, i.e. *praxis*, in contradistinction to narrow modern understanding of technology as instrument or machine of production.

To understand the core idea of post-development critique of technology, it is necessary to refer to the works of precursors, namely Cornelius Castoriadis (1975, 1978), Jacques Ellul (1977, 1987), André Gorz (1975, 1988), and Ivan Illich

(1973a, 1973b). Their works, chiefly produced during the 1970s and 1980s, shed light on the historical process in which scientific and technological advancement and corresponding rise of productivity engender the deterioration of quality of life of advanced industrial societies. The paradox of well-being, they argue, is attributed to a peculiar configuration of science, technology and economy under the paradigm of development. In effect, the actually exiting development of industrial system proceeded in ways advanced scientific technology is applied to production without considering its side-effects on human subsistence and eco-system.

What these critics have in common is that they discuss technology not in terms of the performance of particular instrument or machine used in this or that particular development project but in terms of the mode of social ordering involved in adopting a series of technologies. In other words, they examined technology in the light of its effects on the systematization of the social field, as is exemplified in Ellul's definition of late twentieth century technology as a 'system' (Ellul, 1977). In particular they focused on the social and technological framing of human practices and the way it conditions the possibility of life.

Why did they investigate technology in such way? This is because technology, understood in its most original sense, is closely associated with the dimensions of human practices and social ordering. Castoriadis' reflection on the ancient Greek notion of technique helps us to understand this point.

For his part Castoriadis conceives society as a product of what he calls 'social imaginary significations': imaginary significations 'animate society's institutions' and 'hold society together' (Castoriadis, 1991b, p. 221). As he explains, social imaginary significations consist of two distinct but mutually complementary principles: *legein* and *teukhein* (Castoriadis, 1975, pp. 327-399). On the one hand, *legein* refers to the logic of 'distinguishing, choosing, posing, assembling, counting and saying' (p. 330). It constructs identity through representation and language, i.e. *logos*. It makes things visible, representing them as distinct objects (p. 330, pp. 335-338). *Legein* thus determines boundaries between what exists and what does not exist. On the other hand, *teukhein* refers to the logic

of 'assembling, adjusting, fabricating and constructing' (p. 383), It arranges things and connects them to one another in fabricating identity. Thus *teukhein* is immanent to *legein* and functions as *eidos*, that which gives an ideality and a finality of beings (p. 386). It produces and transforms social relations, bringing forth what is still not present. Hence, *teukhein* introduces another division to society: possibility and impossibility of being, i.e. what is able to do and what is unable to do in the society. According to Castoriadis the ancient Greek word *techné*, the etymological origin of *technique*, is derived from *teukhein* and designates one of its aspects (p. 383).

Castoriadis' insights suggest that one should not see technique as particular instrument or tool, still less technology, i.e. the machine of production that follows instrumental rationality immanent to economic and scientific activities. Rather, technique is an existential and ontological logic that constructs social relations and human, both individual and collective, capacity. Put it in the phenomenological term, technique enacts the *possibilisation* of being.

The technique understood in this way is conceived of as a concept highlighting particular dimensions of social ordering, which gives contents to *heteronomy* and *autonomy*. To begin with, Castoriadis defines heteronomy as a type of social stability in which there is no possibility of questioning the legitimacy of existing social order. In this sense, 'almost everywhere societies have lived in a state of instituted heteronomy' (Castoriadis, 1991a, p. 162). As he continues;

> An essential constituent of this state is the instituted representation of an extrasocial source of *nomos*. In this respect, religion plays a central role. It supplies a representation of this source and of its attributes, it ensures that all significations — those pertaining to the world as well as those pertaining to human affairs — spring from the same origin, it cements the whole by means of a belief that musters the support of essential tendencies of the psyche.(p. 162)

For Castoriadis, the problem of heteronomous state lies in its denial of instituting dimension of society, i.e. the reduction of existing social order to a natural order and the rejection of the possibility that society could have been constructed otherwise. He therefore criticizes the notion of tradition because '[t]radition means that the question of legitimacy of tradition shall not be raised. Individual in those societies are fabricated in such a way that this question remains for them mentally and psychically inconceivable' (p. 163).

In contrast, autonomy means an act of questioning such heteronomous state; it is a source of social change.

> Autonomy comes from *autos-nomos*: (to give to) oneself one's laws. After what has been said about heteronomy it is hardly necessary to add: to make one's own laws, knowing that one is doing so. This is a new *eidos* within the overall history of being: a type of being that reflectively gives to itself the laws of its being. (p. 163)

Castoriadis' notion of autonomy thus refers to a societal project of remaking social order, in contradistinction to a modern, Kantian, notion of autonomy *qua* a freedom of the will of individual human agency. It is principally concerned with openness of social ontology, as he stipulates elsewhere:

> Autonomy is not closure but, rather, opening: ontological opening, the possibility of going beyond the informational, cognitive, and organizational closure characteristic of self-constituting, but *heteronomous* beings. It is ontological opening, since to go beyond this closure signifies altering the already existing cognitive and organizational 'system', *therefore* constituting one's world and one's self according to other laws, *therefore* creating a new ontological *eidos*, another self in another world. (Castoriadis, 1997b, p. 310)

In a situation of autonomy, people are able to institute their society by constructing its own laws. It should be noted that Castoriadis equates the act of

giving laws to the act of creating new *eidos*, which is a function of *teukhein*. It follows from this that autonomy is closely associated with society's capacity of assembling, adjusting, fabricating and constructing social relations, as well as the capability of its members. In short *autonomy is a particular mode and manifestation of technique* that is shared by society as a whole.

Castoriadis' insights are more clearly explained by recourse to Hannah Arendt's philosophy. For her part Arendt observes that speech and action are distinct features that constituted ancient Greek *polis* life (Arendt, 1958, p. 178). The Arendtian concept of politics refers to a practice of making a space in which each and every person presents oneself in front of others by acknowledging his/her worldly relationship with them; it is a practice of making the common world in which the plurality of humans coexists under the principle of equality as *freedom* (pp. 30-32). Arendt stresses that to make the common world requires communication between humans and that that communication is established through human faculties of speaking and acting. Speech and action make it possible for each and every person to disclose oneself in their singularities, i.e. question of *Who*, instead of his established social position and status, '*What that somebody is*' (pp. 179-80). A person enters a web of relationship through his deed and word; politics is a practice of constructing the common world, which is irreducible to other human institutions such as household (*oikos*) and everyday social activities (*socius*). Arendt also refers to the primordial definition of the word 'interest', which means 'in-between persons' and 'binding together', i.e. *inter-est* (p. 182). She remarks that speech and action are concerned with this sphere of in-between: '[m]ost action and speech is concerned with this in-between, which varies with each group of people, so that most words and deeds are about some worldly objective reality in addition to being a disclosure of the acting and speaking agent' (p. 182).

One can infer without difficulty that what Arendt describes in the term of speech is, for Castoriadis, a manifestation of *legein*, and action a manifestation of *teukhein*. For Castoriadis, technique refers to various practices of making relationship between humans; it is coterminous to Arendt's concept of action

qua praxis. Such interpretation can be gleaned from the fact that he chastises Marx for establishing a neutral, scientific, definition of technique that reduces *praxis* to fabrication and production of material, and chiefly economic, objects (Castoriadis, 1978, pp. 297-300). It follows from this that to question technique in its most original sense means to question creative capacity of human practices, i.e. capacity of constituting the human world. Moreover, put in Arendt's term, autonomy can be said to designate specific manner of making the common world, i.e. conditions and manifestation of freedom.

III. Problems of Modern Technology

The above discussion shows that technique concerns itself with the mode of social ordering and human practice, rather than the performance of particular instrument or machine. Once we acknowledge the issue of technique in this way, it is possible to reexamine and reevaluate the problems associated with modern technology and development more clearly.

To begin with, it is needed to understand a specific socio-historical circumstance in which the issue of technique *qua technology*, and its meaning and problematic, is formed in modernity. First of all, Castoriadis succinctly points to two types of imaginary significations constituting the modern society: that of unlimited expansion of pseudorational mastery over nature and humans; and that of the project of social and individual autonomy (Castoriadis, 1991b, p. 221). In reflecting on the historical evolution of the modern society from nineteenth century to late twentieth century, he illustrates how these two imaginary significations have become integrated into the imaginary signification of capitalism, i.e. the imaginary of the economy. In his article originally published in 1986 he notes that the project of social and individual autonomy has long since been identified with the liberal doctrine of free market and free enterprise whilst the passions for democratic, emancipatory or revolutionary project have lost its credibility (p. 222).

The modern science and technology, Castoriadis argues, are no exception to the imaginary signification of capitalism: 'the science and technique of today

have nothing transhistorical about them, have no value that lies beyond question; these belong, on the contrary, to the social-historical institution that is capitalism as it was born in the West a few centuries ago' (Castoriadis, 1997a, p. 239). Technology and science are invented and employed for the growth of material productive power, based on the idea of rational mastery over nature and human life.

> You know that the domination of this imaginary [of rational mastery] begins first via the form of the unlimited expansion of the forces of production — of 'wealth', of 'capital'. This expansion rapidly becomes *the extension and the development of the knowledge necessary for increased production, that is to say, of technology and science*. Finally, the tendency toward 'rationally' reorganizing and reconstructing all spheres of social life — production, administration, education, culture, etc. — transforms the whole institution of society and penetrates ever further into all activities.(p. 240, my emphasis)

In short, the modern science and technology are used for the sustained expansion of capitalist system. It should be noted that Castoriadis stresses not merely the factual dominance of material, capitalist, institutions but also the influence of capitalist imaginary significations on the social interpretation of science and technology. Indeed, science and technology are called *as such* insofar as they are instruments of capitalist production system. In other words, in the modern society, other forms of knowledge and technique are not regarded as equivalent to science and technology.

One should understand this point with care. Castoriadis does not say that there are no other knowledge and technique than the capitalist ones. He acknowledges the plurality of social imaginary significations as well as the plurality of knowledge and technique which are unique to each and every institution of society in a different place at a different time (pp. 239-40). What he emphasizes here is the specificity of the imaginary that constitutes modernity, which centers its value on the development of technology for capitalist

production (p. 240).

The process of instrumentalization of technique and knowledge in the modern capitalist society has a significant consequence to the human condition. Here Castoriadis' concern about the modern forms of knowledge and technique pertains to what Arendt calls 'world making'. Arendt argues that the construction of the common world, a space in which the plurality of humans appears and coexists, is essential to the preservation of social life. The common world is constructed by making the world of appearance, that is, through human beings' capacity of representing and giving meaning to reality and of making relationship. Arendt herself is critical of the evolution of the modern science and technology, especially those developed during and after the Second World War. She was well aware of the excessive power of nuclear technology and biotechnology, which surpassed the limit of human reflection and control, and cautioned that advanced scientific technology might transform the human condition, particularly that associated with the capacity of making the common world (Arendt, 1958, pp. 2-6).

The genealogy of knowledge and technique, offered by Castoriadis and partly by Arendt, reveals a history in which the life of mankind has become subject to the capitalist industrial system in and through the transformation of conditions of knowledge and technique in the modern age. Both Castoriadis and Arendt contend that the reduction of the horizon of intelligibility and human activity to an economic, and utilitarian, principle delimits human capacity of constituting the common world. The modern project of rational mastery treats nature and human as means of capitalist production and reduces them to objects of scientific and technological experiments as well as resources for industrial production. For Castoriadis, such situation can be reckoned as increased heteronomy, because the modern man has no choice but consuming the products of the established system of capitalist society, including education, work, politics, and leisure time. For Arendt, this situation implies the decline of authentic political life, *vita activa*, which is necessary for constructing and maintaining a shared sphere of cultivating human freedom. Put it in other words,

as she observes in the historical moment of the birth of Cartesian *cogito* (pp. 280-4), the modern society is founded on the vestige of the breakup of common sense, a sense of in-between, to the extent that, in today's context, the risks of advanced scientific technology undermine and transform the security and basis of life.

IV. Development against Authentic Notions of Technique and Sustainability

Post-development critique stresses that the instrumentalization of knowledge and technique has been globalized after the Second World War, through the implementation of international development project. In particular Serge Latouche elaborates his critique of development by applying Arendt's and Castoriadis' insights, as well as Ellul's and Illich's, to the analysis of the problems associated with North-South relations. Latouche argues that international development projects are nothing other than a global expansion of the modern project of rational mastery that aims at 'constructing a human city based on human reason alone' (Latouche, 1995, p. 28). He states that the modern rationality is predicated on a peculiar principle which he refers to as *maximine*, i.e. obtaining in every domain the best result with the least expense of energy (p.28). In other words, *maximine* is the rationalization principle that can be found in every domain of the modern human institutions including politics, economy and scientific technology. In this the paradigm of development plays a singular role in integrating and regulating economic and techno-scientific rationalities to achieve the efficient production of material wealth, i.e. economic growth.

Likewise Latouche sees development projects being subject to what Castoriadis calls the imaginary significations of rational mastery and capitalism. A number of alternative development paradigms proposed by international organizations cannot escape from the prevalence of these imaginary significations. From this vantage Latouche criticizes the notion of sustainable development as the most significant, and problematic, case. The current

ecological crisis perpetrated by economic growth and development urges us to change the basis of productivist and consumerist lifestyles of industrial societies. This suggests a drastic change of social organization, including modes of production and consumption, use and choice of energy resources, and purpose, scale and quality of technology. More fundamentally, the ecological crisis suggests a change of the goal and ideal of industrial societies. As he stresses, '[t]o save the planet and assure an acceptable future to our children, it is not only necessary to moderate current tendencies, but it is necessary to definitely exit development and economism' (Latouche, 2002, p. 87, my translation).

However, the existing paradigm of sustainable development is ambiguous as it allows two types of interpretation: *weak sustainability* and *strong sustainability* (Adams, 2009, pp. 144-147; Brunel, 2009, p. 60; Flipo, 2007, pp. 89-99). The former means sustained economic growth with efficient use of natural resource and the latter sustainable reproduction of ecosystems and human livelihood. In the international debate, there is a tendency that the governments of advanced industrial societies, international financial institutions, multinational corporations and mainstream economists follow the first interpretation whilst the second, often claimed by indigenous peoples and ecologists (e.g. slow food movement) in developed and developing countries, remains underrepresented. The international policy regime of sustainable development explores artificial management of ecosystem through advanced technology and the biological and environmental sciences, without questioning the underlying logic and side-effects of growth-based industrial economy, such as mass production and overconsumption of resources and corresponding rise of ecological footprint. As can be found in the recent discourses of global warming and 'green growth', the attempt at managing ecological crisis through technoscience has resulted in the proliferation of nuclear power plants as an alternative to fossil fuel and the application of biotechnology to agribusiness as a means of overcoming resource scarcity (Goldman, 2005; Rajan 2006; Shiva 2008). It also marginalizes the role that traditional knowledge and customs by indigenous people play in the sustainable reproduction of local livelihood,

to such an extent that the deprivation of their subsistence takes place (Vigna, 2011). The mainstream sustainable development is thus tethered to the logic of profit-driven free market economy: its core value lies in economic sustainability, not ecological sustainability. As Vandana Shiva (2008) points out, such tendency further separates the economy from the living system and exacerbates Earth's reproductive capacity. Latouche's distinction between an authentic concept of sustainability and the pseudo-idea of sustainable development clearly fits here:

> The sustainable character refers not to 'actually existing' development, but to reproduction. Sustainable reproduction ruled the planet by and large until the eighteenth century. [...] This sustainable reproduction does not necessarily mean a conservative immobilism. Evolution and growth latent in ancient societies are integrated to a large and well moderate mode of reproduction, which was always adapted to natural constraints. […] On the contrary, the historical and practical signification of development, tied to the program of modernity, fundamentally opposes sustainability. What matters in development is to exploit, to make valuable objects, to extract profits from natural and human resources. The invisible hand and the harmony of interests guarantee that everything becomes the best of the best possible worlds. (Latouche, 1995, pp. 125-6, my translation)

The existing productivist regime of development and its attempt at managing ecological crisis technologically, Latouche cautions, would ferment catastrophe (Latouche, 2010, Ch.1). The nature of catastrophe can be both intra- and inter-generational. It is intra-generational because overexploitation and overconsumption of natural resources, chiefly by advanced industrial societies, accumulates unsustainable degree of ecological footprints and threatens the environment and livelihood of developing countries. It is intergenerational because the ecological crisis induced by the present modes of production and consumption exacerbates survival and life chances of future generations. Hence the actually existing development does not meet the conditions of sustainability.

Latouche's concern about sustainability and intra- and inter-generational justice comes from his reflections on the reproductive capacity of ecosystem and human societies. However, there is another dimension he does not fully elaborate, though implicit in his work, given the influence of Arendt and Castoriadis. I call that dimension a *political* condition of sustainability, which is understood in terms of the intra- and inter-generational distribution of the possibility of *action*. I shall explain this point in line with Arendt's political philosophy. In her reflections on three categories of the human condition (i.e. labor, work, and action), Arendt introduces the concept of history and stresses the role that action plays in constituting the common world:

> All three activities [i.e. labor, work, and action] and their corresponding conditions are intimately connected with the most general condition of human existence: birth and death, natality and mortality. Labor assures not only individual survival, but the life of the species. Work and its product, the human artifact, bestow a measure of permanence and durability upon the futility of mortal life and the fleeting character of human time. Action, in so far as it engages in founding and preserving political bodies, creates the condition for remembrance, that is, for history. Labor and work, as well as action, are also rooted in natality in so far as they have the task to provide and preserve the world for, to foresee and reckon with, the constant influx of newcomers who are bon into the world as strangers. However, of the three, *action has the closest connection with the human condition of natality; the new beginning inherent in birth can make itself felt in the world only because the newcomer possesses the capacity of beginning something anew, that is, of acting*. (Arendt, 1958, p. 9, my emphasis)

The common world of humans, the space where the life of each and every person is preserved, assumes that the possibility of acting, i.e. of doing something new, is reserved for newcomers. The role of politics is to guarantee this possibility, this freedom of action, to the future generations. It is not impossible to establish

this passage by Arendt as a general political condition for intergenerational justice, that is, a political condition of sustainability.

As is explicit in her later work, Arendt argues in line with Kant's theory of judgment that the establishment of communicability and common sense is the condition *sine qua non* for making the common world (Arendt, 1971, pp. 255-272). In particular she lays emphasis on the role of *spectators*. In making the community of coexistence, each and every human being has to act as a spectator and to present oneself in front of a manifold other spectators: 'Nothing and nobody exists in the world whose very being does not presuppose a spectator' (p. 19). The political condition of sustainability, therefore, means that one must act in front of the future generations *qua* spectators, acknowledging them as equal members of the human world who share the earth and societies with us.

Now, to sum up this section, let us evaluate the existing productivist regime of development and technology through the lens of the political condition of sustainability. The prevailing regime of development is problematic because it destroys the political basis of sustainability. As already discussed, the modern development model, with its core value of rational mastery over nature and humans, rationalizes knowledge and technique for the purpose of unlimited economic growth. This impoverishes the meaning of technique, knowledge and human communication, and confines the possibility of human activities to the existing system of growth-based economy. Hence the possibility of action, practice of making the common world, becomes restrained by the logic of economy.

More important, the contemporary capitalist economy driven by the discourses of neoliberal globalization and sustainable development expands their forces on the basis of the rationality of its own. The problem lies in that the rationality of capitalism neither symbolizes nor counts the lives of future generations in their singularities; it reduces future generations to abstract figure of rational economic man and does not constitute common-world relationships with them. Put it in Arendt's term, the existing development model premised on economic globalization and technological control of nature and humans does

not acknowledge the future generations as spectators, and it excludes them from the sphere of politics and eventually deprives them of the possibility of acting politically. It can be said that a series of industrial disasters, especially nuclear accidents such as Chernobyl and Fukushima, illustrate such violation of the political condition of sustainability. In particular, and this is my contention, such violation is accelerated by the rationalization and loss of the authentic meaning of technique, i.e. *teukhein*, which enacts the *possibilisation* of being.

V. Conclusion: Towards a Post-development Ethics of Technology

This paper examined the legitimacy of the modern paradigm of development, mainly investigating the problems associated with the issues concerning technology. The paper demonstrated that the issues concerning technology is not reducible to efficiency or know-how of particular instruments used for particular economic or scientific activities; on the contrary, validity, effectiveness and legitimacy of technology needs to be examined through the lens of its original conception: *teukhein*. The original notion of technique refers to capacity of constituting the human world and the possibility of acting and doing. Such capacity of human action concerns itself with the domain of politics, therefore technology, and more generally technique, needs to be discussed in the light of its contribution to intra- and inter-generational distribution of capacity of constituting the common world. From this vantage the political condition of sustainability is defined as *sustainable reproduction and distribution of autonomy*.

Such understanding of technological issues leads us to reconsider the Japanese debate on denuclearization in the time of the Fukushima crisis. Since the Fukushima accident, the issue of denuclearization is often discussed as a matter of choosing particular technology of power generation, e.g. nuclear energy, liquid natural gas or renewable energy. This exemplifies that the framework of the debate *a priori* presupposes a narrow, modern, notion of technology. However, if we accept the authentic notion of technique, then the focus of the debate of necessity shifts from choice of energy technology to entire

manner of ordering society, including everyday human relations and capabilities of the future generations. The effectiveness, validity and legitimacy of particular energy resource and technology, be they nuclear or renewable energy, must be examined from such authentic understanding of technique. In short, the path to post-nuclear society presupposes the dismantling of the modern conception of technique, i.e. technology.

To conclude the discussion, I suggest ethical and political issues needed for further elaboration in the field of development ethics. First, the Fukushima crisis urges us to face and acknowledge a breakup of ethical foundation of our society, what Bernard Williams calls *confidence*. Williams defines confidence as socially shared set of practice and explanation on the value of society one belongs to (Williams, 1985, pp. 185-9). From Three Mile islands to Chernobyl to Fukushima, humanity has experienced the irremediable risks involved in the technology-driven industrial societies. The Fukushima accident not merely has provoked a nationwide debate on denuclearization. Today, the post-war Japanese development model producing multifarious victims in the peripheries receives severe criticisms and reflections, whereas the government and the industrial world continuously produce discourses of erasing bodily experiences, voices and memories of those victims. One possible interpretation of the current situation may be this: the Fukushima accident hit the hitherto shared confidence in the productivist development model and laid bare a situation in which it is difficult to maintain a national consensus on the prospect of energy policy and social development including the recovery plan from the March 11 earthquake and tsunami. The Japanese society is at a crossroads, with the proliferation of popular discourses searching alternative social values and goals amidst the government-led conservative movement towards economic growth policy (e.g. participation to the TPP negotiation and exportation of nuclear power plants). Here comes the pertinence of Williams' ethical relativism, which states that, if we are not confident that future generations share our values, and if these values are not objective, then '[w]e should not try to seal determinate values into future society' (p. 192). We must acknowledge the limits of the development model based on

productivism and consumerism and let the future generations enjoy freedom of using resources and create their own life chances.

Second, the acknowledgement of the breakup of confidence must accompany the transformation of the existing organization of society. It is needed to reconstruct the Japanese society on a totally different logic from the hitherto dominating industrial system. On this point various proposals by post-development critique, and especially *de-growth* (i.e. *décroissance*), will serve as a frame of reference. De-growth aims to break with the paradigms of productivism and economic growth by introducing ecology-based social activities to the prevailing industrial system. It seeks to change the logic of organizing society, in ways the economy is re-embedded in a web of social relations rooted to surrounding bioregions (Latouche, 2006). More important, the core value of de-growth is to reactivate a sense of limits. Putting limits to productivism, consumerism and corresponding structural violence such as exploitation of nature and humans constitutes an ethics of de-growth (Latouche, 2010, Ch.3). De-growth seeks to dismantle the imaginary significations of rational mastery and capitalism, which govern the modern society, and opens up alternative possibilities of doing and acting. It is argued that the issue of technique runs through the whole theme of de-growth. The project of de-growth, and more generally post-development, needs to be further examined in the light of the authentic notion of technique.

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Post-development and Questions Concerning Technique:
In the Time of the Fukushima Crisis

<Summary>

Yoshihiro Nakano

This article examines the problems associated with the modern paradigm of development through the lens of post-development critique of technique. Drawing on Cornelius Castoriadis' reflection on the ancient Greek notion of technique, author elucidates the relationship between technique and politics: technique is closely associated with capacity of constituting the human world. From this vantage the article examines the modern technology, especially its value and meaning in the culture of modernity. It illuminates how the modern technology obliterates the authentic notion of technique and serves as a means for the expansion of global capitalism. Author contends in line with Serge Latouche and Hannah Arendt that the technology-driven industrial economy undermines not only ecological and social but also political condition of sustainability. Author concludes the article by presenting ethical and political challenges to be tackled in the context of the Fukushima crisis.