

# Rethinking purposive consciousness

## An analysis of sceptical fanaticism after Fukushima

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**Abstract** This paper looks into clashes between social forces for and against nuclear technology in Japan after the Tohoku earthquake. It analyses the social constructs, in which 'pure science' is embedded, and the conditions that enable society's current avoidance of a truly scientific understanding of the situation. Finally, it points out the limitations of purposive consciousness.

### 1 Sceptical fanaticism after Fukushima

In 2008, I became a member of an international research project on the transnational history of popular images of nuclear power, with the role of looking into the popular images of nuclear power in Japan after the World War II. In my paper, I made the point that what Japan half consciously wanted was to repaint the memory of defeat in the war and the atomic bombings of Hiroshima and Nagasaki with a new sort of self-portrait – a self-portrait of a 'technological super power', symbolised by a 'peaceful use of nuclear energy' developed by the most technologically advanced nations at the time. I concluded my paper by stating that this promotion of a 'peaceful' usage of nuclear power would persist as long as the majority of Japanese people continued holding this dream of Japan as a technological superpower, a dream of being what I called a «cyborg nation».

My chapter was practically finished, when the Tohoku earthquake and the nuclear disaster in Fukushima happened on 11 March 2011. For a while I wondered whether or not I should change the conclusion of my paper, because I thought that after a nuclear disaster on such an unprecedented scale the popular images of and the policies on nuclear power may well change. In the end, I left my conclusion unaltered, since I decided that the dream of being a technological superpower is so deeply rooted in the minds of the people, and in society at large, that even this catastrophe would not be enough to change how people see and treat nuclear power. The book was published last year (Lente 2012).

The omnipresent chorus of 'scientific thought' that sounded out loud and proud in Japan dealing with the disaster in Fukushima was one of the reasons why I thought that the meaning of nuclear power would not change dramatically. It is true that after the disaster, a movement of unprecedented scale voicing anti-nuclear sentiments surged in Japan. According to the public opinion polls, after the earthquake and the nuclear disaster, the percentage of people in favour of nuclear power dropped dramatically, al-

though since the first poll of 1968, the percentage of people with a positive attitude towards the ‘peaceful’ use of nuclear power had always been in the seventy to eighty per cent range. But before long a pro-nuclear discourse raises its head again – even in everyday conversations and on the Internet. According to this counter discourse, people who insist that nuclear power has to be abandoned or excessively emphasise the dangers of radiation are ‘emotional’ and ‘unrealistic’ because they lack both the correct ‘scientific knowledge’ and ‘realistic world view’ that would enable them to take into account the ‘inevitability’ of the use of nuclear energy in a country plagued with a shortage of energy resources. Conversely, those criticising anti-nuclear movements naturally maintain that their own opinions were ‘scientific’ and ‘realistic’. In fact, the controversy over nuclear power generation in contemporary Japan is often perceived as this binary opposition between ‘scientific thinking’ and ‘emotional arguments’.<sup>1</sup>

The House of Representatives elections held in December 2012 confirmed the existence of this dichotomy towards nuclear power generation. Given that they were the first national elections to be held after the disaster, candidates naturally addressed the issue of nuclear technology. While almost all of the parties framed policies either decreasing dependence on nuclear power plants or abandoning nuclear power altogether, the Liberal Democratic Party (LDP), which had always stood for development of nuclear energy, criticised the other parties’ policies, labelling them ‘thoughtless’ and expressing the intention of re-evaluating the opportuneness of restarting nuclear power generation in three years’ time. In the elections, the LDP scored a landslide. Immediately after the victory, the new prime minister, Shinzo Abe, appeared on a TV show and remarked that the Government intended to establish new nuclear power plants in the near future. He also said that the results of the elections clearly showed that the Japanese people distrust parties wanting to decrease reliance on nuclear power or abandon it altogether because they realise that anti-nuclear advocates are merely playing a shallow ‘word game’ that ignores reality with its shortage of electricity, rising power rates, and the damage to economic activities that would surely result from any kind of decrease of reliance on nuclear power.

I do not think that the apparent predominance of ‘scientific thinking’ views on nuclear technology appearing in everyday life, various media and the Internet and criticising the anti-nuclear ‘emotional argument’ is representative of public opinion in Japan. In fact, almost all of the public opinion polls after the earthquake show that most of the public would prefer to decommission or abandon nuclear power plants. Additionally, many

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<sup>1</sup> This binary opposition is by no means new. It has characterised the ‘peaceful’ nuclear development in Japan from its earliest stages right after the war. See Lente 2011, p. 196.

anti-nuclear demonstrations are held in various parts of Japan. Nevertheless, the Japanese Government concluded agreements for cooperation on nuclear technology with the United Arab Emirates and the Republic of Turkey in 2013, and the LDP also pledged to restart nuclear power generation before the next House of Representatives election. The members of the Atomic Energy Society of Japan, who, after the incident, rather regretted their meek attitude in the so-called 'nuclear power village' – a network of politicians, bureaucrats, industries, and academics promoting the development of nuclear power in Japan – have also seemingly somewhat recovered their confidence in nuclear power plants – and in themselves.

Living in Japan after Fukushima, I became increasingly curious as to what conditions enabled the 'strength' of all things scientific – the strength that was boldly apparent in all of the critique directed at the anti-nuclear movements, the strength that enabled the Japanese Government to conclude agreements with the UAE and Turkey on nuclear cooperation while the country supplying the technology was still suffering the drastic consequences of a devastating nuclear disaster. Is this unruffled composure something science really should have? Shouldn't it wake up to rationality and change its course when faced with a disaster on such a scale? How is it possible that, in the name of science, people can ignore rational criticism and enthusiastically go ahead with what has been empirically proven to be so unreliable? What does it mean if science changes into something else, into something that resembles religion surrounded by unquestioning enthusiasm?

While I was trying to find answers to these and similar questions, I stumbled by chance on the expression «sceptical fanaticism» coined by Michael Polanyi.

Polanyi, a Hungarian polymath, started his masterpiece *The Tacit Dimension* in response to his encounter with Nikolai Bukharin, a Russian revolutionary and politician, in the Soviet Union in 1936. During their meeting, Bukharin said that there is no such thing as 'pure science'. According to him, the assertion of independency of scientific thought, or science for science's sake, was a «morbid symptom of class society», and in socialist societies, science should serve the needs of the society as a whole. In concrete terms, what that meant was that in the USSR, science would, as a matter of course, obey the goals set in the Five-Year Plans, a series of centralised economic plans developed in the Soviet Union at the time.

Bukharin's remark was a shocking revelation to Polanyi because he saw in it a highly instrumental view on science, a perfect fusion of modern scientific scepticism with its pursuit of freedom of thought, on the one hand, and modern utopianism with its desire for a classless society, on the other. Polanyi coined a term for this subordination of science to society's utopianism: «sceptical fanaticism». The paradox he saw in this sceptical fanaticism was that although modernity should ideally be driven by independent sci-

entific thought and freedom of conscience, with both condemning religious dogmas and secular political and traditional authority, in actuality, the modern state turned – without anyone noticing the transformation – to a complete denial of independence of scientific thought, a denial of freedom of ideas. At the time, Polanyi merely wondered what the consequences of this other modernity would be. But a few years later he found out that this denial of freedom of thought would result in millions of people, including Bukharin himself, falling victim to Stalin's Great Purge.

This conversation and the conclusions that Polanyi drew from it eventually led him to abandon physical science to engage in research in the philosophy of science. With this new pursuit, he aimed to rescue independent scientific thought or freedom of thought in general, from the shackles of sceptical fanaticism, from this purely instrumental view of science that denies freedom of thought. What Polanyi called the «tacit dimension» of knowledge was an expression of human freedom that can never be controlled by society as a whole.

Retrospectively speaking, the phenomenon Polanyi called 'sceptical fanaticism', or instrumental view of science, may not be peculiar to socialist societies. A similar convergence of modern scepticism and modern utopianism has been present in many of the 20th century's 'advanced' capitalist societies, one example instantly springing to mind being the Manhattan Project in the United States. Japan may well be one of the most representative examples of a capitalist society operating with 'sceptical fanaticism' at the very core of its existence, fuelled by the fact that the country's self-portrait in the latter part of 20th century was largely based on the phrase «scientific nation». In one sense the USSR of that time and post-war Japan are very different – in the sense of how science is perceived. In the USSR, Bukharin denied the existence of 'pure science'. In Japan and other capitalist societies, on the other hand, science has to be 'pure', at least ideologically, and scientific thought has to be independent from politics, economics and other social constraints, at least ideally. As I will show later, this difference may not have been so decisive. If anything, this diffusion of 'sceptical fanaticism' is exactly why I became interested in the mechanism of the phenomenon, and, after I completed my research on the historical transformation of nuclear images, it made sense to direct my attention to the social dimension of the constructs that 'pure science' is embedded in, to the conditions enabling this often unquestioned 'strength' of scientific thought.

What I am interested in here is not the question of whether or not Japan should restart nuclear power plants. Although natural science and technology coexisted with 'sceptical fanaticism' in the 'advanced' societies in the 20th century, today it would not be enough to merely analyse the pros and cons of nuclear power plants. This is why the main aim of this paper is to clarify the conditions that allow 'sceptical fanaticism' to pass unques-

tioned. Recent developments have provided us with good material to work with, as in the promotion of nuclear technology after Fukushima where these tendencies may appear more clearly than ever.

The following discussion is a rough sketch of my research in this direction. Strictly speaking, it would be better to conduct an empirical study of any one specific science and technology, with nuclear technology as it has evolved in post-war Japan being one choice available to me. However, research on nuclear technology in Japan has only been active, in the true sense of the word, during the short period that has passed since the disaster in Fukushima, which is why it may be too early to draw any conclusions just yet. In addition, as my own knowledge in the realm of institutions of natural science is largely limited to what I have amassed during my research on nuclear energy, in this paper I will merely try to outline a picture of the social institutions surrounding 'pure science', making it general by listing only the phenomena that are not limited to nuclear technology. And, in the long run, an analysis of the general mechanism giving science its strength would provide us with suggestions on how to rethink the place of Nature in contemporary Japan.

## **2 The connections in which 'pure science' is embedded**

One view often voiced in various studies on science is that all existence - including even the laws of nature - is culturally or socially constructed. I would like to start the discussion by suggesting that there are, in fact, universal laws of nature independent from the human beings observing them. However, scientific knowledge and observation are only treated as valuable when the actors and institutions conducting research on the laws of nature and applying their findings in practical endeavours operate as entities that are relatively independent from all others. We can call such actors and institutions the 'scientific world', whose relative independency is enabled not by its separation from all the other worlds but by its particular dependency on them. This dependency means that when the scientific world comes up with questions of whether particular research into laws of nature and the development of technology based on it are good or bad, such questions have to be answered by some other world.

Most commonly, the world responsible for assessing the value of science is the political world. Based on its legitimacy (established either democratically or by force in a tyrannical state), the political world either approves or disapproves the activities, both theoretical and practical, conducted in the scientific world. In addition, the political world establishes the precedence to be given to research on the laws of nature and to the development of different kinds of technology. In this sense, knowledge about universal laws of nature and the practical application of such knowledge do not ex-

ist independently. In both theory and in practice, science stands together with the political world responsible for evaluating all scientific initiatives, approving some and rejecting others. As a result, judgments establishing which kind of scientific research is important are externalised beyond the political world – in addition to the rationality of research and of applications of laws of nature per se – becoming the criteria for decisions regarding actions to be made in the scientific world. People who conform to the judgments made by the political world tend to occupy high social positions in the scientific world.

The scientific world is thus structured on the basis of this specific relationship of dependence on the political world, and it is futile when the scientific world attempts to maintain the neutrality of any particular theoretical inquiry or its application since every such assertion inevitably contains a detour for evaluation to the political world. This is the mechanism that forms and maintains so-called ‘pure science’ on nature. But even though it is highly dependent on the external political authority that, to a great extent, forms the research in the first place, the social position of the scientific world is perceived to be a direct consequence of the ‘pure’ value of research on the laws of nature. The legitimacy or authority of scientific research and its applications are based not only on the internal rationality of science but also on the political world external to it.

So what about the political world? The framework underpinning political thought in the 20th century is a concentric circular composition with politicians in the centre, the nation-state as the basic unit of operation, and other nation-states adding up to an international network. The political world based on this concentric circular composition is also interdependent with other worlds, one of the most influential of which is the economic world.

The economic world has a dual-layered structure: the market itself and the academic circles researching it; the market appears as a world of physical exchanges and the academic circles as if they were trying to unravel the law of market just like natural science unraveling the laws of nature.

The market with its exchanges based on the free price system comprising, at least, private companies that supply goods and the households demanding them is perceived as a physical entity following its own universal laws, adding a layer of competition for economic growth to the composition of the states. However, no matter how natural it appears, the market is but a man-made artefact. Therefore, unlike laws of nature, there are no universal laws of market existing independently of the human beings observing it. The market exists by virtue of its dependence on the political world that establishes and maintains the institutions required for it to function, ensuring that actions by companies and households are in conformity with the laws of the market. When the system functions well enough, it results in the illusion that the law of market is, in fact, universal.

The world of the market exists together with the body of knowledge regarding the law of the market. Similarly to the world of natural science, research on the market is treated as valuable only when the actors and institutions conducting the research and applying their findings in practical endeavors are operating in relative independence from all other worlds. Moreover, this relative independence is possible only through dependence on the political world.

Therefore, this dual-layered economic world exists through dependence on the political world, to which it externalises the problem of legitimacy or authority. The universal laws of the market are regarded to exist just like the laws of nature, with bold claims being made regarding the neutrality of knowledge on the market. It is the mechanism, by which 'pure science' regarding the market is established.

The way the political world thinks and acts is based on the state of the market at each particular time and on the scientific knowledge regarding the market available. The way it judges scientific research and technology to be important or not depends on this context, in which political thought operates. That is, one of the pillars sustaining every judgment is the economic growth of the nation-state, and every step taken needs to be based on a judgement regarding whether it will help or hamper the economic growth of the nation-state. Conversely, the economic world that is maintained through dependence on the political world influences the way economic growth is perceived by the political world. In concrete terms, what this means is that scientific knowledge of the market greatly influences the judgments made by the political world in choosing the most effective of the countless possibilities of support for companies in their production and distribution of goods as well as for the stimulation and protection of consumers.

However, it is more difficult for scientific knowledge about the market to disguise itself with neutrality or clothe itself with a scientific aura than for scientific knowledge about nature to do so, because the market world has a greater dependence upon the political world and, therefore, scientific knowledge of the market also depends more on the judgments of the political world than the scientific knowledge of nature. Therefore, the tendency for people and organisations conforming to the judgments made by the political world to have higher social positions than those who do not conform is even stronger in the world of market science than it is in the world of natural sciences. Conformity to the political world becomes an even more important criterion of conduct in the world of market science than in the world of natural sciences. In spite of this conformity, or maybe even because of it, knowledge about the market tends to insist on its neutrality or scientificity. At the same time, in the world of market science there is more room for doubts about the neutrality of scientific knowledge of the market, doubts that are often voiced by the non-conforming. Therefore, the

conflict in the world of market science tends to be more intense than in the world of natural sciences. This highly unstable scientific knowledge of the market serves as the base for the political world to make its decisions regarding economic growth of the nation-state. Here we can find a peculiar interdependency between the political world and the scientific knowledge of the market, interdependency of reciprocal authentication.

All judgments made by the political world as to the importance or otherwise of scientific research on nature are framed by this reciprocal interdependency with the scientific knowledge of the market. That is, the political world thinks about the economic growth of nation-state using scientific knowledge of the market that is regarded as neutral. The scientific knowledge of the market is regarded as being effective for the economic growth of nation-state as long as it conforms to the market established by the political world, on the one hand, and to the judgments that weigh the importance of each particular scientific pursuit in terms of its contribution to economic growth, on the other. And the political world judges what kind of scientific research on nature is important in view of its contribution to the economic growth of the nation-state. This is how the research and application of scientific knowledge on nature was established in the 20th century; it was connected in a two-layered way to at least two more entities: politics and economy. On the one hand, there is interdependency between the scientific and political worlds, and, on the other, interdependency between the political and economic worlds.

### **3 Strength of science in a system of irresponsibility**

The scientific world is embedded among a series of connections to other entities, but it is the connection to the political world that most directly affects the problem of establishing which kind of research on nature is more important. The political world maintains its own independency through its reciprocal interdependency with the scientific and economic worlds. However, there is one more important agency that strongly affects the political world - that of public opinion. And this is especially true for a political world that adopts a democratic system.

Public opinion either consents to or rejects policies proposed by the political world. And it does the same regarding judgments on scientific knowledge. Needless to say, if a piece of scientific knowledge is supported by the political world, and if public opinion is in favour of the political world, such knowledge becomes stronger. However, even if there are a lot of objections to a certain piece of scientific knowledge, each objection has to fight its way on its own. Based on the analysis made in the previous section, we can further elaborate on the discussion to forge the following understanding of the strength of scientific knowledge on nature.



One of the core concepts of this strength of scientific knowledge on nature is its neutrality. First of all, the neutrality stems from the universality of the laws of nature. Of course, the universal law of nature is not the only aspect that guarantees the strength of scientific thought in modern society. And what adds to this strength is the connection linking scientific knowledge of nature and embedding it in other entities. Through this support supplied by the political world, the interdependency of the political and economic worlds orienting the economic growth of the nation-state, and the approval of the public given to the political world, scientific knowledge on nature can proudly assert its unselfish neutrality, displaying its greatest strength.

When a specific piece of scientific knowledge becomes the target of criticism by the public, the scientific world retorts with this neutrality of scientific knowledge. That is why such a critique is often regarded as an 'emotional argument'. First of all, in many cases such a critique does not meet the criteria for scientificity laid down by the scientific world, because it is not backed by professional scientists and lacks the status of science established with laboratories, journals, scientific associations, budget, educational background and position within the hierarchy of the scientific world. But even if a scientific critique of science by the public is on the same level as the discourse on the particular subject carried out in the scientific world, it is still often regarded as an 'emotional argument' because it problematises issues deviating from the conventional range of objects of research in the scientific world, which is conventionally determined by judgments made by the political world.

There is one more reason why a critique of any specific piece of scientific knowledge by the public is regarded as 'emotional arguments'. As I have mentioned above, this critique can pose a threat to the political world, to the economic growth of the nation-state, and to the consent of the public so far. In this sense, the critique is often labelled troublesome if it is perceived as a critique of the economic growth of the nation-state, or of the market economy itself. It does not matter whether the critique is made with an intention to criticise economic growth or the market. Even if it is not made for this purpose, it often is regarded as having critical ends. As a result, criticism will be regarded as an 'emotional argument' since not only is it beyond the bounds of scientific knowledge, but it also forgets the many benefits that the critics themselves are getting from the economic growth of the nation-state.

Scientific research and the development of technology are, therefore, protected by at least a double firewall. One part of it is the neutrality of scientific knowledge, and the other is the principle of economic growth, based on the unit of nation-state. As long as this double firewall protects scientific research and development of technology, it will be extremely difficult for a critique of any specific piece of scientific knowledge to get

through. Most commonly, being unable to pass through the firewall, the critique ends up being cast aside by the dubious but rock-hard dualism of 'scientific thinking' and 'emotional argument'.

The firewall (at least in the case of Japan) is further strengthened by yet another wall of defence that might be the most sound protection for scientific knowledge to exist – a 'system of irresponsibility'. This term was coined by a Japanese political scientist Maruyama Masao to describe the 'ultra-nationalist' mechanism of promotion of war by Japan during the World War II. Describing what he meant by 'system of irresponsibility', Maruyama wrote that it is a «remarkable state of affairs in which a country slithered into war, pushed into the vortex by men who were themselves driven by some force that they did not really understand» (Maruyama 1963, p. 16). And although today Japan is not in a state of war, the connections surrounding the scientific world constitute a state of affairs that is quite similar to the object of Maruyama's research.

Based on the development of science and technology, the entire country is unhesitatingly moving towards economic growth. However, each of the agencies promoting this growth is driven by forces that it does not really understand. Although in its pursuit of scientific research and its practical applications the scientific world tends to insist that scientific progress is an autonomous process, 'pure science' cannot exist without the justifications supplied by the political world. The political world promotes science for heteronomous, not autonomous reasons, since it is the economic world that supplies reasons causing the political world to promote some sciences rather than others. Equally, the economic world does not have any autonomous foundations justifying the economic growth. Whatever foundations it has, are created by the political world that backs up the market, enabling market scientists to insist on the universality of the law of market and to believe in axioms that authorise the promotion of the economic growth of the nation-state.

In this way, economic growth based on the development of science and technology is promoted by each of the agencies involved in a form of cross-referential outsourcing of authority. None of them has its own language enabling an ultimate justification of the actions taken, which is why each entity simply borrows the language of the other worlds to bolster its justifications. This borrowed language is of the sort that C.W. Mills called the «vocabularies of motive», that is, «accepted justifications for present, future, or past programs of acts» (Mills 1967, p. 443). Of course, if the interdependency between the academic, political, economic worlds and public opinion operated as a decentralised decision-making system mutually preventing abuse of power, such a system would indeed be useful for the control of economic growth based on the development of science and technology. In reality, though, the system does not operate like this at all. The system of 'vocabularies of motive' is set so that each of the worlds has

a hierarchically higher one above it similarly to the ‘rock, paper, scissors’ game, resulting in a ‘system of irresponsibility’ without any ultimate authority. If we demand the reasons why the scientific world proceeds with specific researches, why the political world supports them and supports specific policies maintaining the market, why the economic world concentrates on competition and on certain scientific research, and why public opinion approves specific scientific research and specific policies maintaining the market, all of the answers we will ultimately be given would be external to each of the separate entities.

If this rough understanding is right, this slightly changes the meaning of our previous discussion. As I have mentioned above, scientific research and development of technology backed up by the political world are protected by a double firewall. One part of it is the neutrality of scientific knowledge, and the other is the principle of economic growth based on the unit of nation-state. However, if scientific research and development of technology are in fact also protected by a ‘system of irresponsibility’, there is no need for those involved to take the neutrality of scientific knowledge and the principle of economic growth seriously. And the less seriously people consider such issues as the neutrality of scientific knowledge or the principle of economic growth, the stronger scientific thought becomes. Conversely, if people start to question the problem of the neutrality of science and the importance of economic growth, they will be compelled to reflect on the connection between the scientific, political, and economic worlds as well as public opinion, and reconsider their carefree convictions regarding the strength of scientific thought, just as the contemporary studies of Science, Technology and Society have been doing. But as long as people just pretend to have a great interest in the neutrality of science and economic growth based on the unit of nation-state using ‘vocabularies of motive’, without actually considering them, this will give unreasonable strength to scientific thought backed up by a fully-functional ‘system of irresponsibility’.

The conditions for strength of scientific thought that appear in the critique of anti-nuclear movements after Fukushima in Japan may well be just this kind of escapist scientificity. Neither public opinion nor a sincere critique of nuclear power stations by scientists can easily break the firewall. And this is only to be expected, because many people positioning themselves as ‘scientific’, when the debate is about science, and as ‘realistic’, when it is about economic growth, are not genuinely interested in the problem of the neutrality of either, so the attack on this front is in most cases futile, because the ‘scientific’ or ‘realistic’ parties avoid any sincere discussion regarding neutrality. The more sincere the anti-nuclear movements are about the problem of security of nuclear power generation, the more irresponsible the ‘scientific’ and ‘realistic’ critique of anti-nuclear movements becomes as regards the problem of security of nuclear power generation. This is the situation I would like to call ‘sceptical

fanaticism' - to use Polanyi's expression. And although Polanyi himself described 'sceptical fanaticism' as being produced by the fusion of 'scientific scepticism' and 'fanatic utopianism', the above analysis makes it possible to say that 'sceptical fanaticism' is produced by 'groundless enthusiasm' for scientific thought in a 'system of irresponsibility'.

#### **4 Contingency, conscious purpose and the social**

The interdependency between the scientific, political, economic worlds and public opinion, or the 'system of irresponsibility' encompassing science and technology is, of course, not peculiar to contemporary Japan. It has been more or less present in at least many, if not all, 'advanced' capitalist societies, although the concrete ways in which the phenomena manifest themselves may differ. It is this system that has made it possible to achieve a truly unprecedented development of science and technology in the 20th century.

What is peculiar to contemporary Japan, especially after Fukushima, may be the 'extremity' of the situation. Since the mid-1980s, in Japan, forms of interdependency have become more and more simplified, and have increasingly become a blatant cover-up, quickly losing whatever actual regulatory functions they ever had. As in a loud chorus of 'globalisation', competition is intensified artificially; not only this relative independency, but many other protective mechanisms of society also start to be deregulated, and a rapid increase of irregular employment is a manifestation of the selfsame change. The Tohoku earthquake and the nuclear disaster in Fukushima, which happened right in the middle of the artificially promoted 'globalising trend', strengthened this direct interdependency more than anything else had ever done before. It has shown us that the 'system of irresponsibility' that has sustained the development of science and technology so far become so strongly rooted in society that even a nuclear disaster is not enough to upset it.

Of course, this is only one aspect of contemporary Japan. As a result of the fact that interdependency between social entities, which ideally should protect all aspects of society through mutual control, has now transformed, merely authenticating every established power, there is an increasing number of people and actions that drop out of the framework simply because the framework no longer supports them. And one aspect of contemporary Japan that just cannot be overlooked concerns the various actions and experiences that are thus left out. It includes the various complex experiences of the sufferers of the earthquake and the nuclear disaster - which may involve having to stay in the quake-hit areas, or being evacuated against one's will - experiences of people with handicaps, the aged, parents with small children, and so on. Although all of these people are left out of

the framework of economic growth promoted on the basis of science and technology, and although they do live in very severe conditions, they are still managing to survive – largely by their own efforts. They are sustaining their lives through various barely noticeable arts – little ways of doing little things – and through small collectives, conducting meetings, having chance encounters, creating their own narratives, their own humour, their own shared memories, or learning how to forget their painful experiences instead, establishing their own ways of surviving, always operating in their own dialects, one step away from the mainstream official Japan. Compared to the flashy political and economic topics, and the great chorus of *kizuna* (ties) and *fukko* (reconstruction) appearing in the mass media, these little ways and little collectivities sustaining the lives of those outside the Japanese success-story are barely noticeable to the majority. However, their unimposing quietness and modesty do not mean a lack of importance. These little ways and collectivities are absorbing all those people and experiences that are dropping out of the deregulated framework of interdependence between the political, economic, scientific, and cultural entities. I would like to call these little ways and collectivities the grass-root ‘thick social’, an increasing thickness of society that is one aspect of contemporary Japan appearing not only in the quake-hit areas but also in various places all across the country.<sup>2</sup>

There is no doubt that the increasing thickness of society through the various manifestations of this grass-root ‘thick social’ is an important part of life in the contemporary Japan. However, whether the present situation, in which this grass-root thickness compensates for the increasingly thinning political, economic, scientific, and cultural frameworks, is good or not is yet a different question. Societies in general tend to be highly conservative, managing to keep the balance of the whole unchanged, so a change in one variable is often merely compensated by a change in another, resulting merely in a postponement of a problem and not its solution. And surely this increasing thickness of the grass-root sociality to compensate for the thinning mechanisms of mutual control in contemporary Japan is, in this sense, merely a postponement of the solution.

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2 Here I will mention only a few of such activities. One is JDF (Japan Disability Forum) Hisaichi Shogaisha Shien Center Fukushima (<http://jdf787.com/>), a centre supporting people with disabilities in Fukushima Prefecture. This centre published a report that gives a very rich account of the situation entitled «JDF Hisaichi Shogaisha Shien Center Fukushima Annual Report of the Activities in 2011 and 2012» <https://gumroad.com/l/rxQY>; Another is Hougen wo Katari Nokosou Kai ed. *Magenetcha: Collected Works of Haiku on A Great Earthquake Disaster*, Ginno Suzu Co., Ltd., a book written by a person who experienced the disaster in Miyagi Prefecture; the third is Sendai Mediatheque (<http://www.smt.jp/>), an organisation, which is conducting various activities but is most notable for an ongoing archiving project collecting movies on the earthquake, thus documenting people’s lives and damages in the quake-hit areas right after the earthquake.

In the essays included in *Steps to an Ecology of Mind*, unique thinker Gregory Bateson pointed out the limitations of «conscious purpose» (Bateson 1987, p. 432). According to Bateson, the ‘consciousness’ oriented to ‘purpose’ and concentrating only on limited causal relationships cut off from the whole matrix, in which the causal relationships are embedded, inevitably generates unintended consequences. He maintains that the unintended consequences are gaining an excessive influence at an alarming speed following the development of science and technology, and recently acquired an unprecedented ability to upset the balance of the whole. Therefore, Bateson insists on the necessity of ‘wisdom’, stating that «It may be essential for *wisdom* that the narrow purposive view be somehow corrected».

In the light of Bateson’s arguments, we can understand the sceptical fanaticism and the increasing thickness of the grass-root social in contemporary Japan as an upset of balance of society as a whole through the excessiveness of conscious purpose. In other words, the phenomena we described above may show the limitations of the modern ‘conscious purpose’ constructed on a base of science and technology. What this paper tried to show are, therefore, some clues about how to deal with this upset balance. Although the problem of limitations of ‘conscious purpose’ and the task of solving it are not new, they need to be addressed once more. And the quest of fighting this ‘conscious purpose’ has been central in Bateson’s research throughout his life, no matter which area he was working in.

Lastly, I would like to say a few words about what Bateson called ‘wisdom’ in his research. For him, human ‘wisdom’ is the mechanism that can correct the narrow purposive view. It goes without saying that ‘conscious purpose’, especially modern ‘conscious purpose’ closely connected with humanism and individualism, is one of the most prominent properties of human beings, and perhaps it would be simply impossible to eradicate it from human society altogether, by means, for example, of a holistic view of the world. What we need is to learn how to control it and lessen the damage it brings. And for me, the ‘wisdom’ that can help us here lies in the following three endeavours.

Firstly, to pay more attention to the grass-root social. As the scope of the established political, economic, scientific, and cultural frameworks based on ‘purposive consciousness’ gradually shrinks, little ways of doing things and little collectivities that absorb the people and experiences dropping out of the framework will become increasingly important. However, this grass-root sociality is not at all grand – it is often barely visible. We need many people to continuously work on it, pay attention to it, and keep it alive. The thickness of society generated through this sustainable development of the grass-root social will become the foundation that will enable our society to absorb the damage caused by ‘purposive consciousness’ and, in the course of time, to correct the narrow purposive view.

Secondly, to rectify the system of irresponsibility surrounding science and technology. This is the most straightforward approach to correction of the narrow purposive view, but it is also one that is highly difficult to execute, because the difficulty in rectifying it is one of the most remarkable characteristics of the system of irresponsibility. Nevertheless, vigorous activities, including various forms of critique, are being conducted even now to rectify the system. I believe that one example is that of the anti-nuclear movements in Japan, which are surely not only fighting against the nuclear power generation but also against the system of irresponsibility itself. And what we need most, if we are to break through the firewalls and reform the system of irresponsibility that surrounds science and technology, is to accumulate a description of it. One way to do this is to set up an investigating committee that could function as a tool to lay bare the concrete mechanics of the system of irresponsibility, and although this will require a lot of time and effort, it may well be the shortest way to rectification.

Thirdly, to learn the reality brought about by the narrow 'purposive consciousness'. As I have mentioned above, a system based on 'purposive consciousness' inevitably generates random sequences of events, and no one can take, or is going to take, full responsibility for any unintended consequence. Basically, it is impossible to control any consequence even if we act fully expecting the actions based on the 'purposive consciousness' to lead to unexpected results. The unexpected always appears, it is often perceived as (and is) a pressing problem, and that is why we often get 'new' algorithms and machinery that claim to solve such problems - algorithms and machinery, which quickly come into fashion and then just as quickly disappear. If it is so, it is better to dispense once and for all with the illusion that we can control the results of our 'purposive consciousness'. Rather, we should reconcile ourselves to the fact that unintended consequences will occur no matter what, making this understanding the central pillar of our planning, of our philosophy; this idea that our intended actions may and will generate unintended consequences out of our control will surely soften the damages of 'purposive consciousness'.

The Tohoku earthquake and the Fukushima nuclear disaster may again show the limitations of our power to control nature. What is more, the state of society after the disaster shows how heavily the social balance was upset by the 'conscious purpose'. If we are to rethink nature in Japan as it is today, we may need much more than a successful anti-nuclear movement or the development of alternative energy resources - we may need changes on a far more extensive scale. What we need in order to rethink nature and our place in it now is wisdom that could help us correct our 'conscious purpose' by paying attention to the grass-root social. The grass-root social can furnish us with room for 'play', making it possible for individuals to detach themselves from the 'conscious purpose', describing the 'secular' system of irresponsibility to rectify it, and giving contingency the seat of

the 'sacred' value that will break the tyranny of 'conscious purpose'. This and nothing else will help us to set right the balance upset by 'sceptical fanaticism', or 'system of irresponsibility'.

And this new kind of wisdom may well be needed for humans to coexist in the age of globalisation. Or to exist at all.

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