

A Search for a Model of Critical Engagement with Technology: Feenberg's Instrumentalization Theory or MASIPAG's¹ Struggle against Corporate Control of Agricultural Technologies?

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Abstract: Steigler's "originary technicity," Latour's "actor network theory," and Ihde's "post-phenomenology" accentuate the entwinement of technology and human existence. To imagine a world devoid of technology and a technology without a human being is unthinkable. The integral relations between technology and human beings are irrefutable. But while it is so, human beings' attitude towards technology, particularly modern technologies, remains ambivalent. Recognizing their inescapable relations, however, suggests that human beings may opt to simply accept or negate, or develop a critical attitude towards technology. This paper presents two models of critical engagement with technology, Andrew Feenberg's instrumentalization theory and MASIPAG's development of alternative agricultural technologies. In sum, it argues that the MASIPAG model, given the current capitalist order, holds a more promising approach to technological development than Feenberg's.

Keywords: Philosophy of technology, critical engagement, critical theory, Andrew Feenberg, MASIPAG

Introduction

There has been a significant recognition of the entwinement between technology and human existence prompting Bernard Stiegler to speak of "originary technicity"—by which he means technology's proximal

¹ MASIPAG stands for Magsasaka at Siyentipiko Para sa Pag-unlad ng Agrikultura or Farmer-Scientist Partnership for Development.

and integral relations with human existence.² Indeed, various facets of human existence are closely interwoven and mediated by technology as exemplified in Don Ihde's post-phenomenology and Bruno Latour's actor network theory. For Ihde, technology mediates human beings with the world in three ways: "embodiment relations," "hermeneutic relations," and "alterity relations." In embodiment relations, or the "(Human-technology)→World," individuals perceive the world through the technology. In hermeneutic relations, or the "Human→(technology-World)," technology represents the world to the person. And, lastly, in "alterity relations," or the "Human→technology(-World)," technology stands as a "quasi other" that invoke responses from the individual.³ While Ihde highlights technology's role in human beings' relations with the world, some scholars accentuate technology's power to shape human relations and social organizations, practices, and values.⁴ Undoubtedly, it is unthinkable to imagine a world devoid of technology and a technology without the human being. Reality, claimed Bruno Latour, has to be conceived within and between the axis of "human subjects" and "nonhuman objects." It is nothing but a network of relations between human beings and nonhuman objects—in this case, technology. This network of relations produces a kind of life a human being lives.⁵ Indeed, it is suffice to say that the entwinement of technology and human existence is undeniable.

While there is an undeniable dimension of inescapability from technology, human beings' proper attitude towards it remains ambivalent. This ambivalence concerns whether technology is value-neutral or value-laden. As value-neutral, it is believed that technology remains to be tools subservient to and in the service of the person. As value-laden, technology is used in a manner a person sees fit. As value-laden, technology is thought to shape human beings and human relations in ways that elude the person's agency. Rather than the person exerting power over technology, a value-laden position emphasizes that it is technology that exerts power over the person. Most scholars on technology believe that technology is value-laden. Recognizing technology's value-laden character implies that the person is

² See Bernard Stiegler, *Technics and Time 1: The Fault of Epimetheus* (Stanford, CA: Stanford University Press, 1998).

³ Don Ihde, "A Phenomenology of Technics," in *Philosophy of Technology: The Technological Condition – An Anthology*, ed. by Robert C. Scharff and Val Dusek (Sussex: Blackwell, 2014).

⁴ See Langdon Winner, "Do Artifacts Have Artifacts?" *Daedalus*, 109:1 (1980), 121–136; Albert Borgmann, "Focal Things and Practices," in *Readings in the Philosophy of Technology*, ed. by D. M. Kaplan (New York: Rowman & Littlefield, 2009), 115–136; Peter-Paul Verbeek, "Resistance is Futile: Toward a non-Modern Democratization of Technology," *Techné: Research in Philosophy and Technology*, 17:1 (Winter, 2013): 72–92.

⁵ See Bruno Latour, *We Have Never Been Modern* (Cambridge, MA: Harvard University Press, 1993).

never wholly in control over herself. At the least, a value-laden perspective accepts that technology influences the way the person lives. At the extreme, it is claimed that the person is totally under the mercy of technology. In either spectrum, technology is an “other” which cannot be simply left on the fringes of human existence. As a consequence, as some would have us believed, one has to accept or escape from it.

A reductionist position (simple acceptance or rejection), however, is an ill-informed view as it consigns one into either utopianism or dystopianism.⁶ In the former, technology is ascribed with the power to redeem the person from her miserable conditions. With the latter, technology rules and strips the person of her humanity. On the other hand, an escapist view advocates a flight, as it implores that life is better away from the influences and vagaries of modern technologies.

The reductionist position is a sweeping position and it reduces the person’s relations with technology into either/or. Tiles and Oberdiek, however, warn that a reductionist position does not help as it excludes a more nuanced and critical relation with technology. More often than not, the reductionist position springs from one’s encounter with technology; insofar as a positive encounter brings a more accommodating and utopian attitude, a negative encounter leads to either nihilism or escapism. Any of those fails to see “various technologies for what they are.”⁷ Hence, a critical engagement is therefore needed.

In what follows, I present two models of critical engagement with technology: Feenberg’s instrumentalization theory and MASIPAG’s approach to farmers’ empowerment through the development of alternative agricultural technologies. After which I argue that, given the current capitalist order, the MASIPAG approach is more promising than Feenberg’s.

Feenberg’s Instrumentalization Theory

Feenberg’s instrumentalization theory is an attempt to go beyond the simple affirmation or negation of technology. Responding to the polarized divisions among philosophers and social theorists of technology, Feenberg seeks a middle approach which recognizes technology’s invaluable presence in human existence but without succumbing to technological determinism.

⁶ See Langdon Winner, “Technology Today: Utopia or Dystopia,” *Social Research* (1997), 989–1017; Trevor Pinch and Weibe Bijker, “The Social Construction of Facts and Artifacts,” in *Philosophy of Technology: The Technological Condition*, ed. by Robert C. Scharff and Val Dusek (Sussex: Blackwell, 2003), 221–232.

⁷ See Mary Tiles and Hans Oberdiek, “Conflicting Visions of Technology,” in *Philosophy of Technology: The Technological Condition – An Anthology*, ed. by Robert C. Scharff and Val Dusek (Sussex: Blackwell, 2014), 257.

Banking on human agency and the democratic society, Feenberg claims that technology can serve human values and interests, and the ideals of democracy.

Particularly, the instrumentalization theory is explicitly conceived to critically deal with critical theory's ambivalent attitude towards technology. There are two such attitudes: the fearful and the neutral. The former is represented by Marcuse while the latter by Habermas. For Feenberg, both Marcuse and Habermas fail to understand the nitty-gritty of technology.⁸

"Scientific and technological rationality," Marcuse believes, underlies the logic of the capitalist social order. Through it, capitalist production is increased in unprecedented heights. Likewise, it shields the capitalist social order from various forms of resistance by effectively subsuming the whole society into the vortex of its own rationality—efficiency, productivity, profitability, and economic growth. It successfully attunes individual desires and aspirations to the very reason within which capitalism operates—the desire for profit and wealth and the perpetual attitude to consume. The subtle integration of individuals to capitalist logic results in the total incarceration of the society and any attempt to escape from it becomes a slim option.⁹ The Marcusean path conceives technology as only one dimensional; hence it abrogates technology in its totality. It is, therefore, mistaken.¹⁰

Habermas proposes a value-neutral view of technology. His theory of modernity holds that society is constituted by two worlds: the system and the lifeworld. Each world is governed by a distinct medium. Systems such as politics and economy are coordinated by the media of power and money, while the lifeworld operates through the medium of communication. Each of these media is internally suited to its own logic—the systems for material reproduction, while the lifeworld for socio-cultural reproduction. Feenberg claims that Habermas's "system-lifeworld" distinction pictures a dualistic world—world separate from each other which imply that the operation of the system is neutral. In the Habermasian path, technology is beyond the operational limit of the lifeworld.¹¹ This is also a mistake.¹²

Instrumentalization theory advances a "double aspect theory of technology." It combines the insight of both "technological determinism" and "constructivism". The former view claims that the essence of technology is

⁸ See Andrew Feenberg, "The Mediation is the Message: Rationality and Agency in the Critical Theory of Technology," *Techné: Research in Philosophy and Technology*, 17:1 (Winter 2013): 7–24.

⁹ See Herbert Marcuse, *One Dimensional Man* (Boston: Beacon Press, 1964).

¹⁰ Andrew Feenberg, "The Critical Theory of Technology," in *Transforming Technology: A Critical Theory Revisited* (New York: Oxford University Press, 2002), 164.

¹¹ Feenberg, "The Mediation is the Message," 7–24.

¹² Feenberg, "The Critical Theory of Technology," 164.

untainted by historical factors and that the social environment has nothing to do with its operation. The latter view posits that technology is wholly dependent upon its social context.¹³ Instrumentalization theory, therefore, postulates that technology is constitutive of both aspects. Technology has two dimensions, the “primary instrumentalization” and “secondary instrumentalization.” In primary instrumentalization, technology is conceived and made for the purpose of productivity and efficiency. Technology is decontextualized from the social milieu and hence it is oblivious to the social environment where it operates. Secondary instrumentalization points to the contextualized object. Technology enters the social world and is imbued with social meanings. As a result, it acquires social significance as it influences and shapes the person’s relations with the world. Beyond productivity and efficiency, the contextualized object is evaluated as whether accommodating or excluding particular interests or whether it is sensitive or not to social values.

Feenberg holds that technology must be analyzed in two dimensions.¹⁴ While Marcuse only considers the primary instrumentalization, Habermas maintains that the two dimensions are distinct from one another. Hence, the possible interactions of the two domains are considerably severed in both Marcuse and Habermas. As a consequence, there is an inevitable absence of feedback mechanisms, criticisms, and possible enrichments. As the level of primary instrumentalization is immune from the responses of the social environment, technology “can act on its object without reciprocity.”¹⁵ For technology to be truly at the service of society, the to-and-fro movement of primary and secondary instrumentalizations must be unhindered. Once this is done, the primary instrumentalization—the decontextualized object—is subjected to the analyzing and evaluating gazes of the social environment. In such case, there is enormous potentiality to alter the design of the technology to make it sensitive to social and cultural conditions. Technology would then be “embedded in a larger framework of social relations.” Rather than serving the logic of efficiency and productivity alone, technology supports social values and public interests.

The capitalist social order, however, disconnects the reciprocal relations of the two domains, particularly, in the process of production through “decontextualization,” “reductionism,” “autonomization,” and

¹³ See Andrew Feenberg, “From Essentialism to Constructivism: Philosophy of Technology at the Crossroads,” in *Technology and the Good Life?* ed. by Eric Higgs, Andrew Light, and David Strong (Chicago, IL: The University of Chicago Press, 2000).

¹⁴ See Andrew Feenberg, “Critical Theory of Technology: An Overview,” *Tailoring Biotechnologies*, 1:1 (Winter, 2005), 47–64.

¹⁵ *Ibid.*, 48.

“positioning” of “the collective laborer and to nature as the object of production.”¹⁶

Decontextualization abstracts the “technical elements” from “particular contexts [so] that they can be combined in devices and reinserted into any context.”¹⁷ Likewise, abstraction is done to the workers as capitalism forcefully removes individuals from the society within which they operate and inserts them into a system that technically organizes the production process into several domains—this process has come to us as the “division of labor.” In reductionism, nature and human beings are only treated as a possible resource in the production process. Autonomization organizes the production process into highly specialized divisions—this is aptly described in Weber’s bureaucratic model where each office is assigned with specific functions. But more than that, each office can dispose their function off without necessarily expecting a reaction from the other. Thus, in human relations, a manager commands his subordinates while expecting them to obey his orders. Positioning refers to the relation between the “technical subject” and the object wherein the former holds decisional or directional power over the other. In sum, the production of technical object (technology) and its production process is done in a highly controlled condition (technical action) for its optimal result. In other words, in the capitalist social order, technology and its production process are done with the end view of productivity and efficiency. The capitalist productive order is not, however, completely immune from feedbacks. It encounters social norms, values, and interests, making it vulnerable to social responses. Social acceptance, rejection, and criticism have important bearing to technological productions, particularly on technical designs to attain social functions. By responding to social and cultural peculiarities, the myth of technical isolation is demystified and the chasm between primary and secondary instrumentalizations is broken down.

Feenberg’s opposition to technological determinism brings to light society’s critical role to safeguard technology’s alienating aspect. In his accounts of the disabled individuals for a “barrier-free design” of “sidewalk ramp,” “French Minitel,” and AIDS activists’ struggle over the cure of AIDS, Feenberg shows how public interests is incorporated in technological design to address broader public needs.¹⁸ In the case of the “sidewalk ramp,” the interests of disabled people are given due consideration resulting to a more inclusive society, one that caters to individuals with disability, while the French Minitel altered its original design from purely “information

¹⁶ *Ibid.*

¹⁷ *Ibid.*

¹⁸ See Andrew Feenberg, *Questioning Technology* (New York: Routledge, 1999), 134–136, 125–126.

distribution” to a “communication based” or dialogical based technology. In these instances, people’s actions play a key role in transforming technologies to become more inclusive and responsive to social needs.

Feenberg relies on “micropolitics” where individuals at the local level directly confront technological problems through direct involvement in resistance movements or in dialogue with experts.¹⁹ Feenberg’s model rests on people’s active involvement in influencing and shaping the level of primary instrumentalization. It hinges on greater public participation, democratization, and restoration of human agency against the destructive whirlpool of technology.

MASIPAG’s Alternative Farming Technologies: Farmers Reclaiming Control over Their Farms

MASIPAG is a Philippine based national network of farmers and scientists working hand in hand to develop farming technologies and practices that support the interests of small-scale farmers. Its establishment preceded from a series of nationwide consultations on the impact of the Green Revolution in the Philippines. Moved by glaring rural poverty caused by the farmers’ inability to cope with an agricultural technique developed and prescribed by the Green Revolution, MASIPAG seeks to improve farmers’ quality of life by developing alternative farming practices and technologies that build farmers’ strengths and capacities.

The Green Revolution is a set of strategy which aims to address food deficits by increasing food productivity through agricultural research and infrastructure developments through the combined efforts of governments and various aid agencies such as the Rockefeller and Ford Foundations.²⁰ Some scholars, however, claimed that it is more than that. Cleaver, for instance, emphasized that it was part of an overall strategy to transform the Third World as an “open profitable new market” and to integrate the agricultural sector as an important component of capitalism. The restructuring of the agriculture sector is, therefore, an imperative. By training agricultural technicians, economic managers, and policy-makers, agricultural policies in Asia, such as in the Philippines, are successfully shaped and defined by the ideals of the Green Revolution.²¹ Hence, more than an agricultural technique, the Green Revolution is also a political approach to

¹⁹ *Ibid.*, 120.

²⁰ See Prabhu Pingali, “Green Revolution: Impacts, Limits, and the Path Ahead,” *Proceedings of the National Academy of Sciences of the United States of America*, 109:31 (2012), 12302–12308.

²¹ Harry M. Cleaver, “The Contradictions of the Green Revolution,” *The American Economic Review*, 62: 1/2 (1972), 178–179.

expand the capitalist market.²² Several decades after it was implemented, the agricultural industry is now dominated by agrochemical giants like Bayer, Syngenta, BASF, Monsanto, and Dow DuPont—the world’s leading manufacturer of fertilizers and pesticides, and producers of seeds like rice, maize, and wheat. Bayer and Monsanto alone account for “24 percent of the world pesticide market and 29 percent of the world’s seed market.”²³ Accordingly, there has been a growing concentration of the production of agricultural inputs to a handful of agricultural companies in the world.²⁴

The Green Revolution is controversially paradoxical in many ways. After it was implemented in the 1960’s, an unprecedented increase in food production followed in the following decades.²⁵ Increasing food productions means lower food prices, higher caloric intake, and better health and life expectancy.²⁶ Likewise, there was also evidence of adverse effects to ecological diversity and communal unity and cultural values. “Instead of abundance, [communities] *have* been left with diseased soils, pest-infested crops, waterlogged deserts, and indebted and discontented farmers. Instead of peace, [communities] have inherited conflict and violence.”²⁷ Furthermore, in their study on the rice-growing villages in the Philippines, Estudillo, Quisumbing, and Otsuka attributed changes in household income to nonfarm rather than farm income sources.²⁸

The Rockefeller and Ford foundations took the lead in agricultural research in the developing countries. In the Philippines, the founding of the International Rice Research Institute (IRRI) was made possible through a substantial funding from both foundations. IRRI was established to conduct scientific studies to develop high yielding varieties of rice that mature quickly and that are suited to changing weather conditions in order to guarantee uninterrupted production for the whole year. To supplement and hasten rice production, the government provided the necessary infrastructures like irrigations and farm to market roads. The *Masagana 99*, of the Marcos years,

²² Vandana Shiva, *The Violence of the Green Revolution: Third World Agriculture, Ecology, and Politics* (London: Zed Books, 1991), 11.

²³ Juliette Leroux, “Food Security at Stake: What the Bayer-Monsanto Merger Means for Europe,” in *Green European Journal* (7 March 2018), <<https://www.greeneuropeanjournal.eu/food-security-at-stake-what-the-bayer-monsanto-merger-means-for-europe>>.

²⁴ *Ibid.*

²⁵ Jonna P. Estudillo and Keijiro Otsuka, “Lessons from Three Decades of Green Revolution in the Philippines,” *The Developing Economies*, XLIV-2 (2006), 123–148.

²⁶ Robert Eugen Evenson, “Assessing the Impact of Green Revolution, 1960 to 2000,” *Science*, 300 (2003), 758–762.

²⁷ Shiva, *Violence of the Green Revolution*, 11.

²⁸ Jonna P. Estudillo, Agnes R. Quisumbing, and Keijiro Otsuka, “Income distribution in rice-growing villages during the post-Green Revolution periods: the Philippine case, 1985 and 1998,” *Agricultural Economics*, 25:1 (2001), 71–84.

was the embodiment of the Green Revolution in the Philippines. It was the brainchild of the Green Revolution.

Masagana 99's IR-8 was bred from seeds coming from China, Japan, Taiwan, and Indonesia and in highly controlled conditions in Los Baños, Laguna. It was the universal prototype propagated and distributed to Filipino farmers. Its cultivation requires a transformation of local farming practices to suit its needs and its demands. IR-8 necessitates that “[it] would be densely planted and amply supplied with water and fertilizer in meticulously weeded, pest-controlled fields.”²⁹ In short, it requires proper irrigation and application of fertilizers and pesticides—modern farming techniques alien and unfit to the local and small-scale farmers. Its promise rests on intensive chemical inputs as it is only through it that the seeds thrive and produce higher yields. Its success hinges on the realization of certain ideal conditions. “Without fertilizer or without controlled irrigation the new varieties [HYV] usually yield no more and sometimes less than traditional strains.”³⁰ IR8 was developed unmindful of the local conditions. Its development “epitomizes a theory-driven, disembedded approach to crop improvement.”³¹ The International Food Policy Research Institute (IFPRI) notes that benefitting from Green Revolution entails a lot of required conditions to succeed, such as: “ensuring that small farmers have fair access to land, knowledge, and modern inputs,” infrastructure support like proper irrigations are provided, and possible negative impacts to environment are effectively safeguarded.³² Indeed, Green Revolution was driven by farming practices within the framework of the market whose “focus has largely been on promoting large-scale, high-input agriculture.”³³ But as Stone and Glover emphasizes, “...the heavy dependence on external inputs was part of what made the seed attractive to technocrats and American aid officials; it was not a drawback but a benefit.” While Stone and Glover did not explicitly state what they meant, the “USAID distributed IR-8 in a package together with farm chemicals supplied by Esso and Atlas.”³⁴

The Green Revolution has impacted Filipino farmers in various ways. Traditional farming practices (diversified agriculture) were replaced with

²⁹ See Glenn Davis Stone and Dominic Glover, “Disembedding Grain: Golden Rice, the Green Revolution, and Heirloom Seeds in the Philippines,” *Agriculture and Human Values*, 33:1 (Spring, 2016).

³⁰ Cleaver, “Contradictions of the Green Revolution,” 177.

³¹ *Ibid.*

³² International Food Policy Research Institute, “Green Revolution: Curse or Blessing?” in *International Food Policy Research Institute* (2002), <<http://ebrary.ifpri.org/utils/getfile/collection/p15738coll2/id/64639/filename/64640.pdf>>.

³³ See Lorenz Bachmann, Elizabeth Cruzada, and Sarah Wright, *Food Security and Farmer empowerment* (Laguna: MASIPAG, 2009).

³⁴ *Ibid.*

modern techniques (monocropping). Rather than producing for consumption, farmers were advised by agricultural technicians to produce cash crops which made farmers vulnerable to market fluctuations. More than this, the transformation of traditional farming to modern agriculture has positioned farmers at the nexus of the agricultural market. With modern agriculture, agricultural production is undertaken with the end view for profit. As the success of monocrop farming depends on the farmers' capacity to purchase, farmers have to sell in order to purchase farm implements. In all of these, a qualitative change in the farmers occur, they have become dependent on agrochemical companies not only for farm implements such as seeds, fertilizers, and pesticides but also for agricultural techniques. Now, they have to rely from agricultural experts and technicians, often trained by agrochemical companies. This has, unwittingly, stripped them of the knowledge and skills. Farmers were "deskilled."³⁵ Rather than producers of knowledge, modern agriculture made them consumers. By being so, they were dispossessed of their control over their farms and of their lives. In spite of these, IFPRI dubs the Green Revolution a success.³⁶

With these contexts in mind, MASIPAG seeks to develop alternative farming practices by developing alternative farming technologies. By alternative farming practices we mean an agriculture system which tries to do away with capital-intensive and high-input agriculture prescribed by the Green Revolution. Often, this is referred to us as organic agriculture. By alternative farming technologies we mean the techniques employed for seed breeding, soil fertilization, and pest-control. To boost production, organic agriculture stresses the importance of the well-being of the agro-ecosystem which includes the promotion and enhancement of biodiversity, biological cycles, and soil biological activity as opposed to the synthetic agrochemical inputs touted by modern agriculture.³⁷ Alternative farming technologies, therefore, are integral to organic agriculture. Aside from health benefits and ecological well-being, organic agriculture forms part of an overall strategy to reclaim farmers' control over their farms. Control over the farmers' farm means that farmers no longer have to rely on agricultural inputs from agrochemical companies such as seeds, fertilizer, and pesticides. It means breaking dependency from corporate control of agricultural technologies. Organic agriculture, therefore, is not done for the sake of it. It is envisioned

³⁵ Borrowed from Braverman's notion of deskilling. See Harry Braverman, *Labor and Monopoly Capital: The Degradation of Work in the Twentieth Century* (New York: Monthly Review Press, 1974).

³⁶ *Ibid.*

³⁷ Food and Agriculture Organization of the United Nations, "What is Organic Farming," in *Food and Agriculture Organization of the United Nations* <<http://www.fao.org/organicag/oa-faq/oa-faq1/en>>.

as an alternative approach to a farming approach prescribed by the Green Revolution. Furthermore, it is hoped to be a harbinger of a transformed individual (farmer) and of the relationships (collaborative) between scientists and farmers.

MASIPAG works on a presupposition that farmers can only regain their control over their farms when they become active producers not only of farm implements but also of knowledge. Hence, farmers' empowerment has been the crucial end of various MASIPAG's programs. One of its key approaches is to turn farmers to scientists or "farmer-scientists." In this approach, farming and inquiry are simultaneously done. The field is transformed into a site of inquiry and discovery. From seed breeding to the development of a fully sustainable agro-ecosystem, the farmer stands at the center as the source and the apex of transformation. In the "rice seed improvement program" – which comprises seed banking, seed breeding, and trial farming—the farmer takes cognizance of rice varieties which thrive in the local environment, resist pest infestations, and produce maximum yield. In this program, traditional varieties of rice are retrieved and bred with other varieties through trial farming. Successful varieties are reproduced for cultivation and production while other varieties are kept so that other farmers may use it for further breeding and trials. It is also in trial farming that farmers are initiated with the use of organic fertilizers and pesticides. In rice seed improvement program, as in other MASIPAG programs, theory is embedded with practice and practice is informed by theories. Continuous practice transforms the farmer from a consumer to a producer of knowledge. From being a farmer, she is transformed into a farmer-scientist. While the farmer gains knowledge and skills, she assists other farmers to convert from conventional farming (modern farming) to organic agriculture. Currently, MASIPAG has 273 rice crosses developed and produced by "farmer-breeders."³⁸

A Search for Critical Engagement with Technology

Feenberg's model for critical engagement with technology is founded on a view that there is an inherent tension between human beings and technology. It is founded on the presupposition of technological dominance and social resistance. The instrumentalization theory clarifies technology's two-dimensionality, that is, technology is Janus-faced. It is meant to show that technological development is not immune from the social environment. While it served the logic of productivity and efficiency it can also be transformed or reconfigured to serve the interests of the public. The public,

³⁸ *Ibid.*

however, should not be consigned at the receiving end. It must actively take part by suturing those who produce technology to be mindful of social values. Sensitivity to social values reduces technology's adverse effects to society. Indeed, technology is not necessarily inimical to society as technological determinism emphasizes. Hence, Feenberg calls for greater democratization of technology. Democracy and the democratization of technology ensure "that the power is with the people, not with technology."³⁹ It aims to reverse the asymmetrical relations between human beings and technology.

"[Feenberg's model], Verbeek notes, "rests upon a conceptualization of human-technology relations that is highly contestable."⁴⁰ It suggests a relation of struggle between human subjects and technology and hence a liberation from technology. Drawing from Latour's actor network theory and Ihde's post-phenomenology, Verbeek highlights that "[T]he human being cannot be understood in isolation from technology, just as technology cannot be understood in isolation from humanity. Conceptualizing [human-technology] relation in terms of struggle and oppression is like seeking resistance against gravity, or language."⁴¹ In other words, insofar as technology is constitutive of human existence, liberation from technology is futile. Rather than resistance, what is needed is productive interaction. Rather than liberation, what is needed is "creative accompaniment."⁴² By creative accompaniment, Verbeek means, "creative interpretations of technologies" by "governing technological developments" so that human beings are able to shape their existence through a productive interaction with technologies. Ultimately, for Verbeek, the question is not to bring power back to the people but on how individuals live meaningful lives in the midst of technological developments. In other words, the problem is not with technology per se but on how human beings have creatively employed technology in order to make sense of their existence.

Feenberg's emphasis on human-technology relations is silent about the corporate control of technology which consigns many individuals as passive consumers of an economy based on profit. It is true that powerlessness often results from people's inability to govern their lives but this is not so much because they are helpless victims of technology. Human beings have always the option to creatively interact with technologies to give new forms of existence. The problem is not so much on technological dominance but economic dominance hastened by technological innovations. Feenberg's account of the French Minitel does not really lead to a

³⁹ Verbeek, "Resistance is Futile," 77.

⁴⁰ *Ibid.*

⁴¹ *Ibid.*

⁴² *Ibid.*

democratized technology, while it changes the technology from information based to a communicative one, its reconfiguration has “produce[d] a more marketable and lucrative technology.”⁴³ In sum, its reconfiguration became more advantageous to corporate interests than to the people.⁴⁴ In the capitalist social order, it is profit and return of investment before social values and public interests. Hence, in the dispensation of power, whether to reform the technology or not, public interests are often subsumed in the name corporate gains.

Take for example, the rapid innovations taking place in communication and transportation technologies. While smart phones take on greater role to address the various needs of fast-paced lifestyles, it can hardly be considered as democratization. The same can also be said with the latest development in automobile technologies. While manufacturers take more active role in developing low emission and environment friendly models by harnessing renewable energies, they can hardly be said to be democratic. While addressing public needs and environmental problems, corporate interests were also crucial as a deciding factor. In other words, technological innovations and technological reconfigurations which are supposed to consider the interests of the public cannot be taken at face value because while there is significant projection to cater public interests, the public is also wallowed into the raging whirlpool of capitalism. This is evident on how corporations address the economic shift from Fordism to Post-Fordism or Neo-Fordism.

Fordism is a post-World War II economic paradigm, especially in Western societies, characterized by mass production and consumption of goods by utilizing “scientific management” in the organization of labor and industrial production techniques through a thorough employment of “time” and “motion studies.” Likewise, Fordism also banks on “promotion” and “advertising” as an important aspect of marketing strategies.⁴⁵ Fordism is also characterized by significant state interventions through “social welfare provisions”, “conflict mediation”, and “economic management” by regulating corporate behavior in the national level and “inter-state cooperation.”⁴⁶ Economic management and planning at the global level was coursed through international bodies like the International Monetary Fund-World Bank (IMF-WB) and World Trade Organization (WTO). Post-Fordism

⁴³ See Gerald Doppelt, “What Sort of Ethics Does Technology Require?” *Journal of Ethics*, 5:2 (2001), 157–195.

⁴⁴ *Ibid.*

⁴⁵ See Frederick Winslow Taylor, *Principles of Scientific Management* (New York: Harper, 1911).

⁴⁶ See Clark Kerr, John T. Dunlop, Fredericks Harbison, and Charles Mayers, *Industrialism and Industrial Man* (Harmondsworth: Penguin, 1973).

is a term used to describe the changes in the economic structure in the Fordist era to address its production and consumption problems, some of these are: overproduction and saturation of the western market, rising competition from Newly-Industrialized Countries, such as Korea, Taiwan, and Singapore. To arrest the lurking economic disaster, corporations responded by reconfiguring the whole process of production and marketing chains, including the reorganization of labor. Thus, from mass production of goods, customization for specific market niche became the rule—making the design and quality more suited to market demands and more sensitive to consumer lifestyles and tastes. Furthermore, corporate giants also rely on technologies, such as computers, to implement the “Just-in-Time stock management scheme” where production and delivery of goods depend on market behavior which in turn necessitates flexibility in the manufacturing process paving the way for what we now know as subcontracting and off shore production.⁴⁷

The point is that changes in productions and in the designs of consumer goods do not necessarily translate to democratization as can be gleaned in the economic transformations in the Fordist to the Post-Fordist era. Feenberg’s examples on “sidewalk ramp,” “cure for AIDS,” and the “French Minitel” are undeniable instances where technological design and purpose are geared towards addressing the need of the public. But this is only one side of the story. In a social order where the production of goods is held by corporate giants, technological innovations are suspect to serve and further the interest of profit. In short, any technological reform which is only focused on making technology responsive to public needs without substantially questioning, opposing, or undermining corporate control and ownership can hardly be said to be democratic; it is corporatism.

Corporatism, “the power of business corporations over society,” is primarily grounded on the research process or “experimentalism” whose ultimate purpose is to further “profit and power above all ends.”⁴⁸ In this sense, the generation of knowledge is not intended for the sake of knowledge but in the service of capitalist interest.⁴⁹ But unlike prior researches which only takes place in the laboratory, experimentalism happens in the society itself where society becomes its whole laboratory and resource for new inventions and hence commodities. “Social mediation” performs this important function as it supplies the necessary information—especially to that which is valuable in the society. In this form of experimentation, truth is

⁴⁷See David Harvey, *The Condition of Postmodernity* (Oxford: Blackwell, 1989).

⁴⁸ Luis Suarez-Villa, *Technocapitalism: A Critical Perspective on Technological Innovation and Corporatism* (Philadelphia: Temple University Press, 2009), 1.

⁴⁹ *Ibid.*, 8.

subordinated to that which has “commercial value.”⁵⁰ In short, social mediation does not necessarily lead to democratization of technology. In fact, the opposite could be the case. It can further corporate control.

Successful capitalist technological developments and innovations happen when social values are turned into commodity. If such a case happens, the commodity’s marketability is assured. Commodifying social values meant turning the whole society into a laboratory where people’s desires and behaviors—cultural, religious, political, and economic—are observed, analyzed, and evaluated to draw out social values so that they be integrated in the production of commodities. In the Philippines, for example, the manufacturing of beauty products, from whitening soap to whitening lotion, capitalize on the cultural behavior of a people obsessed on becoming flawlessly white. The point is that, a critical engagement with technology should not focus on making technologies responsive to social needs without bringing into mind the corporate control of technology. Technological developments and innovations that serve public interests are praiseworthy but if they proceed on to giving corporations greater hold over the public by siphoning unprecedented profit and power, they must be viewed with suspicion, and if necessary, they must be questioned, opposed, and overturned. While Feenberg sees the infusion of social values as a functional imperative to democratize technology, it can also be used by corporations to have greater leverage over the public. Indeed, the people’s participation in technological transformations does not necessarily lead to democratization.

The engagement of MASIPAG with agricultural technologies begins with a different presupposition. Unlike Feenberg’s model, it does not see technology per se as adversary. Recognizing the negative impact of agricultural technologies promoted by the Green Revolution, MASIPAG developed alternative technologies that emancipate farmers from agrochemical corporations. Technological innovations, in MASIPAG’s view, should be grounded on local conditions, developed by end users, and produce for social development and not for corporate interests. The way for people to take hold of their lives, MASIPAG believes, is to equip them with skills—to skill or reskill them so that they become producers of alternative knowledge and techniques. Here, knowledge and techniques still serve the logic of efficiency and productivity but it is put at the service of social development and not of capital and profit. For sure, MASIPAG farmers are also driven to increase production and efficiency in order to earn a living. But unlike the arrangements in the Green Revolution, MASIPAG farmers are no longer under the mercy of corporate giants.

⁵⁰ “Social mediation here refers to the intervention of society through ... the kind of relations that stimulate the generation of new knowledge and creativity.” *Ibid.*, 11.

While Feenberg's democratization works within the framework of primary and secondary instrumentalizations, the MASIPAG model believes that the primary and secondary instrumentatization, to use Feenberg's language, goes simultaneously. Technologies, farming technologies in particular, ought to be developed in the context so that the end user, the farmer, is also the developer. In this way, the farmer ceases to be the object of capitalist production. She becomes a subject. Here, the development of agricultural technologies is consciously undertaken not only for efficiency and productivity but more so for social development and individual and environmental well-being. In MASIPAG, technological democratization means more than serving public interests, it means breaking away from corporate interests. Like Feenberg's model, it calls on people's participation in partnership with scientists to produce socially valuable knowledge. But unlike Feenberg's, MASIPAG is conscious that any production of knowledge and techniques must not be held hostage to corporate interests. Social mediation, MASIPAG believes, should not be at the expense of the public.

What the MASIPAG model offers is an alternative vision of technological development—one that is based on local needs and developed by the community. Furthermore, as opposed to Green Revolution where societies are organized to fulfill the needs of the technology, MASIPAG shows that individuals have the potential to organize technology at the service of society. But, whether the MASIPAG model is appropriate to a highly complex social organization—one that requires centralized planning and economy and hierarchical bureaucracy, surely not. But if we envision a decentralized society based on local economy and driven by social and economic well-being rather than profit and return of investments, surely the MASIPAG model offers a food for thought. What is at stake is whether the MASIPAG model remains to be an alternative to the status quo or a model of a future technological development. Recent developments tell that there remains the potential of modern technologies to serve decentralized forms of human organizations. This possibility, however, entails a "shift [from] the center of economic power from national to local scale and from centralized bureaucratic forms to local, popular assemblies."⁵¹

As a model of a future technological development, the MASIPAG model can be brushed aside as a romantic musing as it necessitates a dawning of a new society which is completely different from what we have today. Romantic imagining it may be, but it does not mean that it is not possible. Unless we forget that new forms of human existence and social organizations

⁵¹ See Murray Bookchin, "Towards a Liberatory Technology," in *The Anarchist Library* (May 1965), <<https://theanarchistlibrary.org/library/lewis-herber-murray-bookchin-towards-a-liberatory-technology>>.

are products of hopes and imaginations. The best possible world is still yet to come.

While Feenberg's model remains in the threshold of primary and secondary instrumentalizations, the MASIPAG model shows that society need not beg from the powers that be so that technologies serve social values.

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