Dialectics of technology and the political economy of capitalism: an excursus on Veblen’s views on technology and technicians

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January 2002

* I would like to thank Laurie Adkin, Claude Dennis, Gordon Laxer, William Johnston, Harvey Krahn and Raymond Morrow for suggestions and comments on earlier versions of this work, and Sungur Savran for his editorial contribution.
Abstract

Against deterministic/essentialistic positions that reify technology by disconnecting it from the processes of social construction this article aims to identify those economic, political and social processes, which may help, construct a perception of technology by virtue of which technology can be used as a basis for a critique of capitalism rather than augmenting the domination of capital over society. In dialogue with Veblen’s views on technology and engineers, it is argued that modern technology involves two contradictory tendencies. While the first tendency is geared towards legitimizing and preserving the statu quo, the second tendency takes a critical attitude towards it, as it does not close the search for new possibilities. The article puts forward that if technicians discover their potential autonomy and seek to play a leading role in the formation of a counter-hegemonic bloc against the hegemony of capitalists, they will develop a worldview mediated by the critical tendency of modern technology.
Introduction

As a result of major technological transformations in the last two decades or so, the role of technology in the political economy of capitalism has, once again, become a pressing issue. Andrew Feenberg’s recent book *Questioning Technology* (1999), which has swiftly come to be regarded as an influential work on technology in general, focuses, for the most part, on the political implications of technology in terms of the question of democracy (Hartley, 2000; Kellner, 2001; Raju, 2001). In this book Feenberg moves beyond his earlier arguments in *Critical Theory of Technology* (1991) to suggest that technology is a “contested field where individuals and social groups can struggle to influence and change technological design, uses and meanings” (Kellner, 2001:157). In this sense, Feenberg’s conceptualization of technology as a contested field takes a dialectical approach to technology in opposition to technological determinism and technological essentialism. Deterministic/essentialistic positions reify technology by disconnecting it from the processes of social construction, and end up either with technophobia or technophilia.¹ Against these one-sided positions, Douglas Kellner (1999, 2001) calls for a critical perspective that can explain why neither a negative nor a positive essence can be attributed to technology. In other words, he wants us to distinguish the construction of *technology for democracy* from that of *technology for domination* in given social contexts.

In this article I take up the theoretical challenge posed by Kellner. In accord with Feenberg’s dialectical approach to technology, I aim to identify those economic, political and social processes, which may help construct a perception of technology by virtue of which technology can be used as a basis for a critique of capitalism rather than augmenting the domination of capital over society. I carry out this inquiry at a theoretical level by scrutinizing first the contradictory position of technology in

¹ For how these concepts are related with technological determinism and technological essentialism, see Kellner’s article at [http://www.uta.edu/huma/illuminations/kell25.htm](http://www.uta.edu/huma/illuminations/kell25.htm)
capitalist social relations, and second by constructing a possible anticapitalist ideological position and radical professional identity for technicians, or engineers. I expand my arguments in dialogue with Veblen’s views on modern technology and engineers, especially what he takes to be the contradiction between engineers and the price system. Though Veblen is vague about the social and political conditions under which engineers might oppose the hegemony of capitalists, he locates engineers in a social position such that their material interests deriving from their relation to technology may contradict the existence of the institution of private ownership. This in turn leads him to establish a conflict of ideal interest between engineers and capitalists, which is mediated by their disparate material interests. By working out the implications of Veblen’s argument from a Gramscian perspective, I argue that engineers may take on a professional identity and adopt an ideological position consonant with the prophetic mission envisioned by Veblen. In this sense, they may strive to reconstruct technology in order to materialize a more democratic and egalitarian society.

Veblen’s Diagnosis of the Malady of Capitalism: The Leisure Class

Veblen (1857-1929) became a mythical figure in American academic circles at the beginning of the 20th century. He was born as the son of a Norwegian immigrant family in Wisconsin. True to the aspirations of a middle class farmers’ family who had become Americanized, he was educated at Yale University, one of the elite colleges of the country, and later led a nomadic academic career, moving from one elite college to another (Chicago, Stanford, Missouri, the New School). Although his private life was troubled, in spite of all this, on the basis of his colourful and agitated

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2 Here I have to mention that Veblen uses the term “engineers” to refer to a vast array of technical workers whose jobs involve designing, planning and using technology. Thus, in our high-tech society,
writing, Veblen became the focus of attention for the American intelligentsia of his own times. Nevertheless, throughout the large parts of the 20th century, Veblen remained to be one of the most neglected classical social theorists both in America and elsewhere. With the rise of “new-institutionalism” in social sciences in the last decade, Veblen has recently acquired a new recognition, and his works have come to be seen as mind-provoking and stimulating sources by economists, political scientists and sociologists. Thus, a growing literature on Veblen has started building up (Dugger, 1995; Hodgson, 1995a, 1995b; Loader, 1995; Dugger and Walter, 1996, Kabel, 1996; Nitzan, 1998; Rutherford, 1998; Knoedler and Mayhew, 1999; Mouhammed, 1999; and Fusfeld, 2001).

Although Veblen wrote many books, his first work written at the very beginning of the 20th century, The Theory of the Leisure Class (1899), was the one that aroused most interest among social scientists and has come to be identified with his name (Diggins, 1999). According to Heilbroner’s (1953:216-217) account, when the book was first published, many thought of it as a satire on the lifestyle of the “aristocratic class” and the defects of the rich. In effect, the book describes the lifestyle of America’s rich in a contemptuous manner, heaping example upon example, each more striking than the other, and thus may be considered more as a compilation of observations than a theoretical study (Fine, 1994). The background to this rich story, however, also possesses a hinterland of inquiry important in its philosophical and sociological ramifications.

According to “the theorist of the leisure class,” wealth and leisure are the two sides of the same coin. Leisure implies the absence of the compulsion to work and by creating
a sphere of ostentatious overconsumption, it makes possible the display of wealth. Leisure, then, is both the source and the means of reproduction of wealth. Providing a certain ideal conception of life at the aesthetic and ethical levels, leisure creates a field of attraction that prepares the ground for the existence of various social classes. The upper classes, who are entitled to enjoy leisure, are also the symbols of the idea of success. At the ideological level, the fundamental principle of this idea of success is to be able to live without working. In this sense, for the lower classes who do have to work, leisure is something to be aspired to, a goal to be reached. The ideological consequence of leisure derives from the fact that it legitimizes the possibility of being wealthy without working, by implying that it does not contradict ethical principles. The devastating critique that Veblen addresses to this ideology concentrates on the fact that it is unfortunately not a condition that can one day be attained by all sectors of society. And that is not all. Leisure is also a threat to the social welfare of those people who have to work in order to survive. Hence the ideology of leisure renders acceptable what is in fact an immoral mode of existence. Nearly in all of his works, Veblen stands up against this immoral mode of existence and tries to identify the conditions through which the leisure class of capitalist society can be eliminated. Thus, Veblen’s treatment of the question of technicians within the context of the discussion on technology, makes it possible to question the antagonistic contradictions between material production and monetary wealth and to grasp the mutual determination of work, technology and social welfare.

**Technology and technicians in Veblen’s theory of capitalist society**

Veblen, like Marx, Durkheim and Weber, searches for the historical specificity of modern civilization within the framework of an inquiry into the nature of the modern industrial system – although, unlike the classical trio of sociology, he is considered to
be an economist rather than a social theorist (Davis, 1980). Like the trio, Veblen's interest in the modern industrial system derives from his primary concern with finding an all-inclusive organizing principle of modern society. In Marx, this inquiry leads to the conceptualization of capitalism as a social organization based on the exploitation of the labour-power of free labourers, i.e. commodification of life. In Weber, it results in the conceptualization of bureaucracy conceived as the emergence of an all-encompassing activity system based on legal-rational authority, or domination, invading all aspects of modern life. In Durkheim, it is based on the conceptualization of organic solidarity, which acts as a form of social integration creating a complex interdependent society. In Veblen, on the other hand, it leads to technology, or “the state of the industrial arts,” conceived as a system of knowledge and belief creating an endless tension in all aspects of modern society and causing it to change continuously (Davis 1980, Lauer 1991, Öncü 1996). 4

According to Veblen, technology is something more than the production process that serves to transform nature into objects that will satisfy historically produced human needs. Technology is, first and foremost, a system of information and belief and defines the distinguishing aspect of the “modern point of view” (Veblen, 1919: 2-3). In his conception, modern technology seems to involve two contradictory tendencies (Veblen, 1919:11). The first is the search for the finalization of the debate on solutions by making a certain choice from among the different answers to a problem of a necessity. The second is the tendency to produce new knowledge which will make it possible to question and supersede existing knowledge and find a new answer. Taking these two tendencies inherent to modern technology as our point of departure, we can now enter Veblen’s capitalist society and the domain of tensions and contradictions within this world. The attempt to eliminate the search for solutions, the

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4 It is important to note, however, that “Veblen was not a technological determinist. He did not see
first tendency of technology, creates a sphere of legitimacy for the institutionalized social reality, but at the same time forms an *obstacle* in the way of the second tendency to produce new knowledge, and thereby another social reality. In short, modern technology as a point of view is characterized by the dialectical unity of two opposing tendencies. While the first tendency is geared towards legitimizing and preserving the *status quo*, the second tendency takes a *critical* attitude towards it as it does not close the search for new possibilities. I think, this is what makes technology a “contested field” in the first place.

In his book *The Engineers and the Price System* (1921), Veblen tries to identify the fundamental contradiction of capitalism in the tension between these two tendencies by using the term *sabotage*. In Veblen’s view, sabotage appears to be the “conscientious withdrawal of efficiency” by capitalists who control the country's industrial output (Veblen, 1921:8-9). Veblen uses the term “conscientious withdrawal of efficiency” rather ironically to explain the tactics of capitalists in the face of “overproduction”. For him, “overproduction means production in excess of what the market will carry off at a sufficiently profitable price.” Thus, in order to restore a profitable price the excess output should be eliminated in one way or another. This seems to be the common tactic of capitalists.

[Thus] the requirements of profitable business will not tolerate [overproduction]. So the rate and volume of output must be adjusted to the needs of the market, not the working capacity of the available resources, equipment, and man power, nor to the community's need of consumable goods (Veblen, 1921: 9).

At a later stage in his discussion, Veblen makes a prophetic statement that sounds somewhat uneasy regarding the control exercised on the industrial system by capitalists.

*technological change as leading ineluctably to particular kinds of social change* (Lauer, 1991: 161).
Their only salvation is a conscientious withdrawal of efficiency. All this lies in the nature of the case. It is the working of the price system, whose creatures and agents these business men are (Veblen, 1921: 14).

In other words, Veblen perceives capitalists as individuals whose intentions and actions are driven by the search for a profitable price. In another prophetic statement, Veblen writes: “Price is of the essence of the case, whereas livelihood is not” (Veblen, 1921: 17).

The essence of the case leaves capitalists face to face with a challenging task. On one hand, they are driven towards controlling the rate of output as a function of profitability; on the other, as the leaders of industry, they are required to organize the reproduction of the wealth of the community in such a way that the provision of the means of subsistence to the population is ensured. In this sense, the institution of business comprises a dilemma that places capitalists in a contradictory social position. Because of the requirement of a profitable price, capitalists have to act in terms of their self-interest. However, this may preempt their social responsibility stemming from their leadership position in the community and industry (Veblen, 1921: 17). This can be called the structural dilemma of capitalists. In the words of Veblen:

Those wise business men who are charged with administrating the salutary modicum of sabotage . . . [are] faced with a dubious choice between a distasteful curtailment . . . and an unmanageable onset of popular discontent that may be in prospect . . . (Veblen, 1921: 16).

The discussion so far can be summarized as follows: the capitalism/commodity pair that Marx uses in understanding the nature of capitalist society and the peculiar tension residing in all aspects of it becomes the technology/sabotage pair in Veblen. Sabotage, an organic part of the capitalist system, signifies the prevention of the expansion of industrial production by capitalists and the concomitant result of letting economic resources lie idle. The question of which of the two tendencies of technology as a point of view will predominate in the attitude of
capitalists in pursuit of wealth is determined by which tendency will bring in more money. However, because the owners of wealth wield financial power, when the capitalist enterprise has to choose between the two tendencies, the choice will inevitably depend on the attitude of the owners of wealth and this leads to money being the sole and unique criterion of decision-making. In short, the logic of profitable price constitutes the motive for the behaviour of the owners of wealth and in accordance with this motive the latter prefer one of the two tendencies of the modern outlook, i.e. technology, on the basis of their interests. It can therefore be concluded that the second tendency, which is said to possess a progressive character, can shape social change and social well-being if and only if it brings in more profit for the owners of wealth than the first. Surely, if it does not, then, it will be sabotaged.

According to Veblen (1921:34), in the history of American business, over time capitalists turned their attention away from profits that could be made on the basis of production to concentrate on profits to be made through financial operations alone. In this setup, for the businessman who is nothing but a shareholder, the financial return from production gains importance rather than production itself and thus financial management predominates in the decisions of capitalists, while production management and the technical staff responsible for this function lose their importance. The question to be answered at this point is why the large popular masses, who subsist on the basis of production, consent to the control established over the management of industry through financial power by capitalists who nonetheless remain indifferent to production, the mainstay of the material welfare of society. In addition to the domination of the ideology of leisure in society, Veblen explains the reason for this by the fact that, despite the sabotage of capitalists, American society has been able to regularly increase its material well being. Ironically, the death of Veblen in 1929 was to coincide with the beginning of the Great Depression, which revealed the results of
sabotage in dragging society into actual poverty. In fact, one can read between the lines in *The Engineers and the Price System* what may be considered to be a farsighted prediction of this crisis which was to erupt ten years later. According to Veblen (1921:41), in any crisis situation, capitalist firms have two basic policy options in order to protect profits: they can either reduce production levels or raise production by reducing production cost. Of the two options, it is evident that the first has no bearing on production processes, that is to say that it amounts to overcoming the problem through financial and pricing operations without a modification in the given configuration of production. The second, on the other hand, obviously enters into the sphere of responsibility of production management and calls to technical staff for an improvement in production technology. However, the domination of capitalist firms by financial interests results in the decisions being taken in line with the first option. This links the choice of production technology to the decisions of financial management in line with the priorities of capitalists and creates a *pressure* on technical staff to comply with these decisions. As a result, under conditions of crisis, the option of controlling prices through a reduction of the volume of production in the face of falling prices is preferred to the search for technological innovation leading to a reduction in production costs, the aim being to meet the expectations of capitalists largely and practically divorced from production. For this reason, the moment of crisis is the point when the undermining or sabotaging of the material well being of society is clear for all to see and doubts regarding the legitimacy of the ideology of leisure peak.
The modern industrial system as a particular form of economic organization is an interdependent system of production of goods and services. Each unit in this system is tied to the rest in a dynamic process of input and output linkages. In the terminology of standard organization theory, each unit is an open system that must interact with other units in its environment to survive; it both receives resources from and sends resources to the environment. Thus, as an open system, each unit must control and coordinate its internal activities subject to conditions current in the environment. Veblen considers this unique nature of the modern industrial system as of utmost significance in specifying the position of the engineer in the production of “the material welfare of the people”:

[The modern industrial system] runs on as an inclusive organization of many and diverse interlocking mechanical processes, interdependent and balanced among themselves in such a way that the due working of any part of it is conditioned on the due working of all the rest (Veblen, 1921: 52-53).

According to Veblen, each production unit can work optimally if the industrial system as a whole works optimally. In other words, optimum resource allocation in individual organizations presupposes optimum resource allocation within the industrial system as a whole. Veblen argues that such a condition can be arrived at if “industrial experts, production engineers . . . work together on a common understanding” (Veblen, 1921: 53). More particularly, he says, “on condition that they must not work at cross purposes.”

Although the existence of a common understanding does not necessarily preclude the existence of cross purposes, it can be argued that the former may help work out the negative tendencies stemming from the consequences of the latter. Thus, the first condition for an improvement in the organization of the industrial system as a
whole is the industrial experts’ coming together around a common understanding - i.e. a certain shared-view used as a guide at both micro- and macro-level industrial management. It can be suggested that such a shared-view can emerge if those individuals who are entrusted with the tasks of production planning and management as well as production supervision and execution can communicate with each other without any obstacle or hindrance. Within this communication process, individuals may generate a set of objectives defined as targets to which each individual organization should strive to make its particular contribution. Since the generation of targets involves the participation of all individual organizations and their representatives, there is no need for any superior body to impose a binding condition in order to secure the fulfilment of the targets. In the terminology of game theory, this is neither a zero-sum game nor a prisoner’s dilemma. It is simply an organizational model based on a strategy of cooperation among interdependent units interlocked in an inclusive network. The key assumption of this model is that it includes only the productive agents of industry as its participants. It excludes those who participate in industry as non-producers. When the latter group is introduced into the model, it may turn out to be a zero-sum game or a model characterized by the prisoner’s dilemma.

It can easily be said that this model has never existed in the actually existing capitalist countries. Surely, it was absent in America when Veblen was developing his ideas. Yet it can be suggested that this was the model implicit in Veblen's mind, guiding him in his inquiry towards his conception of the position and the role of the engineer in the industrial system. Thus, the following quote from Veblen must be read in the light of the organizational model suggested:

And for the due working of this inclusive going concern it is essential that . . . technological specialists who by training, insight, and interest make up the general staff of industry must have a free hand in the disposal of its available resources, in materials, equipment, and man
power . . . Any degree of obstruction, diversion, or withholding of any of the available industrial forces, with a view to the special gain of . . . any investor, unavoidably brings on a dislocation of the system, which involves a disproportionate lowering of its working efficiency and therefore a disproportionate loss to the whole, and therefore a net loss to all its parts (Veblen, 1921: 54).

At this point of his discussion, Veblen returns to the concept of sabotage as the major obstacle before “the due working of the modern industrial system.” As clarified earlier, modern technology as a point of view goes beyond the organization of production processes. It defines the peculiarly modern outlook that is geared toward looking for a deliberate opinion on issues. However, these issues may involve complex and multifaceted aspects. Thus, sabotage, it can now be suggested, is the successful directing of modern individuals by investors, or “the captains of finance,” through the act of providing them with deliberate opinions on complex issues in order to stop any kind of critical scrutiny. In doing so, the captains of finance speak, or call out, to individuals from a fatalistic viewpoint. For example, one may hear from a corporation financier that “the project, although it sounds very promising, is unfortunately not financially sound.” In other words, there is no alternative other than its cancellation. This is a directing of individuals whose lives may be adversely affected by the cancellation of the project. Veblen calls this “misdirecting”, though I prefer to call it successful directing:

So it happens that the industrial system is deliberately handicapped with dissension, misdirection, and unemployment of material resources, equipment, and manpower, at every turn where the statesmen or the captains of finance can touch its mechanisms, and all the civilized peoples are suffering privation together because their general staff of industrial experts are in this way required to take orders and submit to sabotage at the hands of the statesmen and the vested interests (Veblen, 1921: 54-55).

Thus Veblen sees in the sabotage more than a mismanagement of production processes at both micro and macro levels. He sees in it the sufferings of “all the
civilised peoples”. Moreover, he conceives of the suffering people as individuals held captive by “vested interests” who ask them together with the general staff of industry to take orders and submit to sabotage. At this point, a brief reflection on Veblen’s conceptualization of vested interests is in order. Such a digression may provide a better understanding of the engineer as the social actor who may discover the root cause of suffering and aim to drive vested interests out of the industrial system by reconstructing technology, hence bringing the inquisitive and critical aspect of the people’s modern outlook to the front.

Veblen's concept of vested interest is analogous to Marx’s concept of surplus-value. By surplus value Marx refers to the process of the valorization of capital:

The capital C is made up of two components, one the sum of money c laid out on means of production, and the other the sum of money v expended on labour-power. . . . When the process of production is finished, we get a commodity whose value = (c+v)+s, where s is the surplus-value. (Marx, 1977: 320).

The expression (c+v)+s can also be written as C+s, which Marx calls C', or the valorized capital. In the event the value of C' is realized in circulation, there will be a surplus sum of money over and above the initial sum laid out on the means of production and labour power. In this sense, Marx sees capital as money making more money.

According to Marx, surplus-value, although created by the labourers within the production process, is appropriated by the capitalist due to his legal property rights, i.e. the initial sum of money laid out on the means of production belongs legally to the capitalist, and hence he is entitled to the proceedings ensuing from the sale of the products. Thus, from a Marxian perspective, capital can also be conceptualized as a source of free income. In this context, free income designates any income obtained without spending labour-power. It is important to note that for Marx,
the source of this free income lies in the production process, i.e. the production of surplus-value by labourers.

Veblen, although he may not disagree with Marx's conceptualization of surplus-value, is interested more in the source of free income residing outside the production sphere. The difference between Marx and Veblen derives from their different conceptualizations of capital. For Veblen, “capital -- at least under the new order of business enterprise -- is capitalised prospective gain” (Veblen, 1964:104). In other words, capital is the power of making claim to a prospective income over the initial cost laid out on any investment, be this a productive or financial activity.

From this arises one of the singularities of the current situation in business and its control of industry; viz., that the total face value [of the assets] . . . always and greatly exceeds the total market value of [those assets] to which the securities give title of ownership and to which alone in the last resort they do give title. (Veblen, 1964: 104-105).

Veblen defines the difference between the total face value and the total market value of the assets as “the margin of free earning capacity.” Thus, the higher the margin is, the higher is the free income accruing to the investor holding the ownership title. In this sense, the owners of productive assets always want to increase the margin in order to increase their free income. One possible way of doing this is to increase “the net product of industry over cost”.

In case the free income which is gained in this way promises to continue, it presently becomes a vested right. It may then be formally capitalised as an immaterial asset having recognized earning capacity equal to this prospective income. That is to say, the outcome is a capitalised claim to get something for nothing; which constitutes a vested interest (Veblen, 1964: 105).

In other words, a vested right may arise from the legal ownership of productive assets. The vested right in its turn may give rise to “immaterial assets” such as securities,
shares, etc., which can be bought and sold, and hence generates a vested interest. Within this process, the attention of “investors” moves away from the value of the “material properties” of assets to their financial value. Thus, vested interest arises from a tangible asset and turns into concern for an intangible asset, i.e. a prospective gain out of some paper.

The vested interest understood as a capitalised claim to get something for nothing deviates remarkably from the logic of the industrial process of income generation, since the latter rests on the idea of producing something to get something else. Unlike industrial interest as such, the vested interest in its pure form is an occupation based on the gaining of income without producing anything tangible. The process of the generation and accrual of this free income manifests itself explicitly in the “speculative episode.” Galbraith writes:

The more obvious features of the speculative episode are manifestly clear to anyone open to understanding. Some artifact or some development, seemingly new and desirable -- tulips in Holland, gold in Louisiana, real estate in Florida, the superb economic designs of Ronald Reagan -- captures the financial mind or perhaps, more accurately, what so passes. The price of the object of speculation goes up. Securities, land, objets d'art, and other property, when bought today, are worth more tomorrow. This increase and the prospect attract new buyers; the new buyers assure a further increase. Yet more are attracted; yet more buy; the increase continues. The speculation building on itself provides its own momentum (Galbraith, 1993: 2-3).

It should be noted that within the category “other property” there may be industrial enterprises in which some of the general staff of industry may be working and producing as business as usual. They may keep working in this way until the day when the “eventual and inevitable fall” comes. Because the increase in the worth of the material assets was fictitious, one day some speculators may stop believing in the “reality” of the prospective gain out of their immaterial assets, and thus they start selling what they bought. When this comes, says Galbraith (1993: 4), “it bears the grim face of disaster. . . . [The] speculative episode always ends not with a whimper
but with a bang.” Thus business as usual comes to a disastrous end and some of the
general staff of industry are now laid off and the rate and volume of output are now
stagnating, if not falling. According to Veblen, in brief, it is the vested interest that
causes this unnecessary stagnation in the industrial system. More than any other
economist, Rudolf Hilferding may be in sympathy with Veblen on this issue, since he,
similar to Veblen, sees “the sway of finance capital” as the fundamental cause of the
failure in the industrial system:

Finance capital has the appearance of money capital, and its form of
development is indeed that of money which yields money (M - M') -
the most general and inscrutable form of the movement of capital. . . .
Capital now appears as a unitary power which exercises sovereign
sway over the life process of society; . . . [Now] property, concentrated
and centralized in the hands of a few giant capitalist groups, manifests
itself in direct opposition to the mass of those who possess no capital
[i.e. those who do not have prospective gain or prospective free

To this, Veblen might have added that among “the mass of those who possess no
capital”, the engineer may oppose the sway of finance capital over the organization of
industrial production, simply because the engineer is the individual “trained at the
cost of the people at large to ensure the welfare of all”. Specifically, the engineer may
ask: “What use is made of the free income which goes to . . . [the] vested interest?”
(Veblen, 1964: 113). He/she may then answer:

The free income which is capitalised in the intangible assets of the
vested interests goes to support the well-to-do investors, who are for
this reason called the kept classes, and whose keep consists in an
indefinitely extensible consumption of superfluities (Veblen, 1964:
113).

“So much seems clear,” says Veblen (1921: 82), “that the industrial
dictatorship of the captain of finance is now held on sufferance of the engineers and is
liable at any time to be discontinued at their discretion, as a matter of convenience.”
Counter-hegemonic affirmation of technology

What perhaps was “clear” for Veblen is not straightforward to see, though. Thus we need to identify the type of rationality on the basis of which the critical perspective that they may possess may call engineers to recognize their social responsibility. This perspective calls engineers to develop techniques that can assure the maximum level of production on the basis of given resources and to create the possibility of using technology unrestrained by any other condition except for the constraints of production processes, in order to raise the material welfare of society to the highest level possible. In order to attain maximum production, engineers have to perceive technology not only as the sum of production techniques or technique of production, but also as a technique of criticism. Industrial organization, which assures the optimal use of the productive forces of society, is subject to the given level of development of forces of production as the sum of production techniques. In this sense, technological knowledge and equipment are both material forces that determine the welfare of society and material constraints. Technology as a technique of criticism implies the need to investigate, given the fact that production activities are also subject to social relations, whether social welfare is constrained by a social barrier over and above the material constraint and to come up with an answer to this question. Hence, engineers, as an inevitable consequence of their social position in the division of labor, come directly face to face with conflicts of interest between classes and sectors and their negative impact on the overall welfare of society. Therefore, engineers have the responsibility to find technical solutions that will remove the material and social barriers restricting production in order to live up to the challenge of the constant improvement of the conditions of life of humanity.
Seen from this critical perspective, engineers appear as subjects standing *above classes*, at least from the viewpoint of their own conception or vision. A consciousness that stands above classes, in turn, is a consequence of an existential configuration that has gained autonomy from the hegemony of the ruling forces within society (Harris, 1990). Existence that is autonomous from hegemony represents the human being who can think in a fashion that is relatively independent from the moral/cultural leadership of the ruling forces and the ideological/political appeal of this leadership (Gramsci, 1971).

Veblen's ideal engineer bears resemblance to what Gramsci refers to as the new intellectual. Gramsci defines the latter in the following way:

> The mode of being of the new intellectual can no longer consist in eloquence, which is an exterior and momentary mover of feelings and passions, but in practical life, as constructor, organiser, ‘permanent persuader’ and not just a simple orator (but superior at the same time to the abstract mathematical spirit); from technique-as-work one proceeds to technique-as-science and to the humanistic conception of history . . . (Gramsci, 1971: 10).

Of course, a capacity to proceed from “technique-as-work” to the humanistic conception of history is also the ability to formulate a universal conception of life, which in turn may direct one in terms of his/her moral presuppositions without being directed by anyone. In short, the engineer as the new intellectual has the potential to become a counter-hegemonic actor who can oppose the classes and groups hegemonic in society.

It is really surprising to find out that an American, Thorstein Veblen, and an Italian, Antonio Gramsci, beginning from significantly different problematics, reach remarkably similar conclusions regarding the role of the engineer and technology in modern capitalist society. To recapitulate, they both assign the engineer and modern
technology an ability to put an end to the internal divisions within society by using the technique of criticism, or “science,” and attempting to organize the people at large around a humanistic conception of history. Thus the pressing question is how the engineer tends to proceed from technique as work, or production, to the technique of criticism aspect of technology and eventually to becoming an actor critical of capitalism.

It can be argued that the more frequent and the deeper the economic crisis, the greater is the likelihood that engineers will attempt to free themselves from the hegemony of capitalists and become counter-hegemonic social actors. This is because in such a context, the structural dilemma of capitalists grow to be more salient as they have to act in terms of the requirement of profitable price more than ever. This may lead to an ever-growing popular discontent. Lacking the consent of the citizenry, capitalists put pressure towards the mobilization of the coercive apparatuses of the state in order to secure the conditions of their class rule. Thus, the deepening of economic crisis may turn into a general crisis of the state (Gramsci, 1971). If such a situation emerges, capitalists use their whole energy on the state. By doing so, they subordinate their historical role of organizing consent to the necessity of suppressing their opponents. To make matters worse, by using, or attempting to use, the state as their overt class instrument, capitalists amplify the divisions within society. As a result, society gets politicized in terms of sectional class interests, leading the subordinate groups and classes to discover the power relations embedded in their everyday interactions.

If we return to Veblen’s problematic in the context of a social organism deeply divided in terms of sectional class interests, we can suggest that by discovering power relations engineers can break with the habit of feeling themselves as “employees of enterprising businessmen.” They may thereby begin to perceive taking orders from
them and submitting to their sabotaging of social welfare to be unacceptable. In this sense, the movement from technique of production to technique of criticism, and eventually to the humanistic conception of history should be conceived of as the collective understanding that reveals itself in the movement from hegemony to the assertion of potential autonomy. The most significant moment of this movement is the transition from technique of production to technique of criticism, for at this stage engineers may come into conflict with the hegemony of the capitalist class over their work and become critical with respect to taking orders from them. This in turn leads engineers to focus on the capitalistic social organization of the industrial society and of the provision of material welfare. Thus, their attention moves away from the relationship between profits and the rate of industrial output to the hidden social relationship between the kept classes and the productive actors of the industrial system. As a result, they discover that the unemployment of the forces of production is the outcome of capitalists’ control over the use of technology as such and also as the modern point of view. At this moment the stage seems to be set for engineers to make a claim to technology as a universal force of production which belongs to the community at large and thus should not accord any special power to any class of persons.

Conclusion

In this article I made an inquiry into Veblen’s theory of capitalist society, in general, and technology and the engineer, in particular, in order to demonstrate that if engineers discover their potential autonomy and seek to play a leading role in the formation of a counter-hegemonic bloc against the hegemony of capitalists, they will develop a worldview mediated by the critical tendency of modern technology. Veblen’s emphasis on the unique nature of modern technology as the central institution of modern industrial society led me to redefine the Veblenian conflict
between the capitalist class and engineers, i.e., between the two agents of the industrial system, the saboteur and the productivist. I suggested the use of the Veblenian technology/sabotage pair to emphasize the hidden social relationship between the capitalist class and the productive agents of the industrial system, which acts itself out as the social relationship between profits and the rate and volume of industrial output. I argued that engineers, understood as the technical labour force, have the capacity to discover this hidden social relationship since they are mostly motivated in their actions in terms of the optimality condition, or what I called technique of production, which is violated by the existence of financial domination over the industrial system. In the last part of the paper, I argued that in the context of a society deeply divided in terms of sectional class interests as a result of a long period of deep economic crisis leading to a hegemonic crisis, engineers understood now as the new intellectuals in the Gramscian sense can break with the habit of feeling themselves to be deferential employees of capitalists, become critical of taking orders from them and refuse to submit to their sabotage of the welfare of the people at large. In other words, engineers can move from technique as the production aspect of modern technology to technique as the criticism aspect of it. By doing so, they also move from hegemony to relative autonomy, or from seeing themselves in the service of a sectional interest to that of “the people.” And they may strive to reconstruct technology as a basis of a more democratic and egalitarian society.
References


Dialectics of technology and the political economy of capitalism: an excursus on Veblen’s views on technology and technicians. Article. Oncu Ahmet. Technology or product developers, R&D specialists, and government or NGO employees in scientific roles. Medical. Health care professionals, including clinical researchers. Not a researcher. Journalists, citizen scientists, or anyone interested in reading and discovering research. You may be eligible for a free account. Sorry, you need to be a researcher to join ResearchGate. Due to our privacy policy, only current members can send messages to people on ResearchGate. Already a member? Log in. Technology has deeply affected the global economy and its usage has been linked to marketplace transformation, improved living standards and more robust international trade. So, if technology has virtually revolutionized every industry in the current global economy, why economists still question whether technology is visible in traditional economic metrics such as GDP, productivity, and corporate profits? Another feature of capitalism is the existence of glaring inequalities in income, wealth and economic power. The existence of big monopolies results in the concentration of not only income and wealth but also of economic power in the hands of a few people. 10. Motive of Profit. 2. Inefficiency in Working- The efficiency of the capitalistic system depends on the existence of free competition and the mobility of factors of production. But the existence of social, economic and legal issues hampers free competition with the result that the factors of production often lie idle. 3. Neglect of National Interest- The capitalists are mainly oriented towards self-interest of maximisation of profits and for this purpose they complete each of the formalities. They neglect the social interest. The continued growth of technology has had a significant impact on the political ratings that candidates achieve. The article Impact of Technology on Politics attempts to analyze how these two spheres of modern life, technology and politics, interrelate and what the outcomes are of this interrelationship. Political candidates use technology in many ways. Different communication channels provided by the Internet have the power to influence the growth of different individuals in their respective spheres. The likes of Twitter, Facebook, and YouTube are powerful communication media platforms that can easily raise the ratings of political candidates. Housley claims that whether we acknowledge it or not, technology is a deciding factor in most political races. Rapid technological innovation and the proliferation of transnational organizations are driving the formation of a global economy that sometimes conflicts with nationalistic concerns about maintaining comparative advantage and competitiveness. It is indeed a time of transition for firms and governments alike. Wolf Häfele referred to this as the evolution of a higher level of integration between technology and human relations. This is evident, he said, in the emphasis on words such as interface, reliability, and adaptation in describing or explaining some of the new technologies.