VEBLEN: ON TECHNOLOGY

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ABSTRACT

This thesis is an attempt to ascertain the role played by technology in the theories of Thorstein Veblen. The data is the whole of Veblen's writings.

The approach used is to examine his writings from the perspective of three critical concepts. These are instincts, institutions, and technology. Technology is placed at the centre of our focus.

Specific topics are taken as important places to examine the role of technology. These include; 1) an examination of technology under present conditions; 2) an evolutionary perspective on changes in technology; 3) an analysis of a case of technological borrowing; 4) Veblen's predictions concerning the future; and 5) the relationship of technology to instincts.

In the conclusions I argue against a dominant interpretation of Veblen's emphasis on technology. Technology receives a great deal of attention in all of Veblen's writing, but it does not follow from that quantitative fact that his perspective was of a determinist nature. My conclusions suggest that Veblen

is not a technological determinist. His analysis is neither static nor mechanistic. Veblen's analysis is best characerized by the term "process".

Instincts provide Veblen with the opportunity of inserting evaluative components into his theories. Man's basic instincts and technology embody positive values that tend to further human progress. At various stages of historical evolution both may conflict with the dominant institutions. These relationships of conflict provide a source of change.

Comparing Veblen to some contemporary theorists who address themselves to the same problems, I find that Veblen has a continuing relevance. Many of Veblen's criticisms of the institutions of his day are equally applicable today.

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INTRODUCTION

The nature and impact of technology has long been an important consideration of social theorists. From the time the discipline of sociology emerged, sociologists have been concerned with the problem of how technology relates to stability and change. One very persistent perspective is that of technological determinism. Many writers who consider Veblen's work are inclined to interpret his emphasis on technology as an example of this perspective. This thesis is an attempt to ascertain the role played by technology in the theories of Thorstein Veblen.

Veblen once commented that:

> "Except as a whole and except in the light of its postulates and aims, the Marxian system is not only not tenable, but it is not even intelligible. A discussion of a given isolated feature of the system...from the point of view of classical economics...is as futile as a discussion of solids in terms of two dimensions."[1]

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1. T. Veblen, "The Socialist Economics of Karl Marx and His Followers," The Place of Science in Modern Civilization, (Russell & Russell: New York, 1961), p. 134.

My feeling is that this statement is equally applicable to Veblen's own work. We must consider his work as a whole and as such the data of this thesis is the whole of his work.

There is nonetheless a critical core of concepts that Veblen used. Professor Dowd indicates that there are three concepts that provide for 'Veblen's strategic focus'.[2] These are instincts, institutions, and technology. On this point I am in complete accord with Professor Dowd's observation. These three concepts provide a valuable starting point from which to examine Veblen's work. In this particular examination, this approach is exceedingly useful because it places technology at the centre of our focus. Technology is examined as a connective link between man's social nature, his basic nature and his institutions.

Veblen's writing always expresses a relationship of tension between components of whatever system he is

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2. D. Dowd, Thorstein Veblen, (Washington Square Press: New York, 1964).

analysing. His concern is with processes, and in writing about parts of a system in tension he presents his case for the potential for change. Veblen is most emphatic about this point. The tension between what a thing is and the use to which it is put is one such tension. This comes out clearly in Veblen's writing on the relationship of technology to institutions. In recent times technology finds expression in machine process. The most immediately relevant institution is business enterprise, a specific historical expression of the larger institution of private property.

We will begin with an examination of what Veblen felt to be the bent of technology. Particularly, we will focus on the bent of industrial technology. For Veblen, it was simply a means - "for good or ill" - however the means,

> "...underlie and condition the scope and method of civilization in other than the technological respect, but not in such a sense as to preclude or overlook the degree to which these other conventions of any given civilization in turn react on the state of the industrial arts."[3]

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3. T. Veblen, The Instinct of Workmanship, (W. W. Norton & Company, Inc.: New York, 1964), p. V.

We can describe the bent technology apart from the way it is used. For Veblen, technology is the ways and means of production. An increase in technological efficiency may be fostered under the impetus of increased profits derived by reducing costs. At another stage of history technological improvements may be "sabotaged" through the use of patents and other institutional means, in order that the increased efficiency does not produce so much of a given commodity that the continued production ceases to be profitable.[4] The use does not prevent one from describing technological improvement as being an increase in efficiency and serviceability. That is to say that the criteria for evaluating the historical growth of technology is independent of the uses to which it is put.[5] This is critical. Technology can be

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4. see Veblen, The Engineers and The Price System, particularly: "On the Nature and Uses of Sabotage," (Harcourt, Brace and World, Inc.: New York, 1968).

5. Dowd comments that, "...Veblen considered the prime function of the economy: serviceability" op. cit., p. 37. This serves as a focal point for Veblen's distinction between the "Community at large" and businessmen. "The interest of the community at large demands vendibility of the product;..." T. Veblen, The Theory of Business Enterprise, (Charles Scribner's Sons: New York, 1927).

assessed as more or less advanced. The criteria are clear. A society having an advanced technology is not necessarily an advanced society - except in the technological sense.

The first section of this thesis deals with the relationship of technology to the institutional framework of modern times. Most of Veblen's writing is either immediately on this point or is directed to showing how the present grows out of the past and has the potential for change into the future. An examination of his analysis of the present allows us to consider a great deal as a unit.

A second perspective bears upon the question of Veblen's emphasis on technology. We may examine how technology and institutions have changed over time and what was their relationship during those changes. This consideration is dealt with in the second section and is entitled an "Evolutionary Perspective".

One particular type of social change provides a very senstive area of examination. The process of technological borrowing is dealt with in the section on

"Imperial Germany". Veblen devoted a whole book to a consideration of the cultured impact of technological borrowing on a large scale. The relationship of a new technology to its institutional matrix is of critical importance in ascertaining the role it plays.

Veblen's prediction concerning the outcome of the present interaction of technology and institution is the final consideration of the relationship of these two factors. Again this should be an important 'testing ground' for examining the role of technology. The causes, directions, and outcome of a predicted change should bear some relationship to the type of technology present. The section on "Predictions" will deal with that relationship.

The last area of consideration is an examination of the relationship between technology and instincts. This is a difficult section that is not easily sub-divided. My approach has been to distinguish between basic instincts and secondary instincts. I feel this is a distinction that can be made in terms of man's basic nature and his social nature. Veblen relates the transition of man's nature over time to the simultaneous evolution of the technology. Most

critical to that section, is an assessment of the relevance of instincts to Veblen's theories.

In the conclusions an appraisal is made concerning the adequacy of some interpretations that various authors have made of Veblen's theories. Accompanying that is a brief evaluation of the problems in Veblen's work. An attempt is made to demonstrate the continuing relevance of Veblen by reference to the writings of C. Kerr and J. K. Galbraith. Both of these writers address themselves to some of the same problems of technology.

TECHNOLOGY AND INSTITUTIONS

Technology affects many aspects of culture. Technology is a means, with labour, knowledge, tools and organization of transforming raw materials into economic commodities. Culture, for Veblen, means "...a balanced system of habits, essentially habits of thought".[6] This section will deal with the habits of thought traceable to a specific kind of technology. The particular technology I propose to consider is industrial technology at an advanced stage of development. Veblen referred to this as machine process.

Machine process refers to a process of production.

> "The whole concert of industrial operations is to be taken as a machine process, made up of interlocking detail processes, rather than as a multiplicity of mechanical appliances each doing its particular work in severality."[7]

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6. T. Veblen, Imperial Germany and The Industrial Revolution, (A. M. Kelley: New York, 1964), p. 221. Veblen defines institutions in a similar manner. Institutions are prevalent habits of thought. Veblen's definition of culture is very ambiguous. However it is concise and relates well to our present purpose, since we will be examining how specific institutions and technologies generate ways of interpreting the world.

7. The Theory of Business Enterprise, op. cit., p. 7.

Essentially it is a process involving a rational co-ordination of many other operations. It is rational in the sense of being based upon systematic knowledge of the various factors involved. In such a view, the machine process can be operative "even in the absence of intricate mechanical contrivances".[8] Usually, however, machine process is more in evidence in modern times where production is based upon intricate mechanical equipment.

Veblen argued that there are two requirements for machine process; one is standardization and the other is the need for "interstitial adjustment" (co-ordination). Veblen examined the industrial as opposed to commercial needs for standardization. His conclusion was that whatever the commercial requirements were, the industrial ones were far beyond them - and were of a much more exacting nature. Standardization makes for, as well as being required by, the easier co-ordination of modern industry. Standardization is carried to areas where the possibility for standardization seems remote. This

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8. Ibid., p. 6.

includes electricity, communications, and even labour.

The fact of industrial process, co-ordination and standardization, provides the opportunity for a surveillance over large areas of the economy. It facilitates combinations and intergration of productive capacities. How this will occur, however, is not solely a function of the logic of machine process. This will be dealt with below. Here I have simply been involved in presenting an outline of the nature of machine process and its requirements. That is, what set of forces does it set in motion, and what habits of thought does it give rise to?

Veblen begins his consideration of technology in his day by examining what are generally referred to as "capital goods". He maintains that in and of themselves these pieces of machinery are simply "raw materials, somewhat deranged and impaired through having been given a form which now makes them 'capital goods'".[9]

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9. T. Veblen, "On the Nature of Capital I," The Place of Science in Modern Civilization, op. cit., p. 345.

An important part of the technological scheme is what Veblen refers to as "immaterial equipment". This has two components, 1) knowledge of the ways and means by which raw materials can be transformed into economic goods and 2) "Co-ordinate with this knowledge of ways and means, there is also uniformly present some matter-of-fact knowledge of the physical behaviour of the materials...".[10] Technological knowledge is the, "...knowledge serviceable and requisite to the quest of a livelihood....".[11]

This immaterial equipment of technology is, according to Veblen, always large even in "primitive" cultures. The role of knowledge is a crucial part of Veblen's theory. The knowledge of ways and means and of how to turn "whatever is at hand to account" is important in establishing the value of resources.

> "But the value which they so have is a function of the anticipated use to which they may be put, and this is a function

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10. Ibid., p. 325.

11. Ibid., p. 325.

> of the technological situation under which it is anticipated that they will be useful."[12]

Under the regime of capital the productive factors are not conceived in simple terms. Labour is not separated from the appliances.[13] The link between human labour and the appliances is the immaterial equipment, the knowledge of ways and means.

> "In the hands of these workmen - the industrial community, the bearers of the immaterial technological equipment - the capital goods owned by the capitalist become "means of production."[14]

In all this Veblen renounces any desire to quantify and any attempt to assess the relative importance of these various factors that make up any productive process or era.[15]

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12. Ibid., p. 349.

13. This point relates to Veblen's criticism of Marx's labour theory of value. For Veblen's criticisms see his two essays on, "The Socialist Economics of Karl Marx" in The Place of Science in Modern Civilization, op. cit.

14. Ibid., p. 345 emphasis mine. The emphasis is simply to accentuate the distinction between the industrial and pecuniary employments.

15. "And it seems bootless to ask how much of the products of industry or its productivity are to be imputed to these brute forces, human and non-human, as contrasted with the specifically human factors that make technological efficiency." Ibid., p. 350.

This notion that knowledge is the "connective tissue" between human labour and the technological appliances, provides a starting point for an examination of the habits of thought that flow from machine process. This is not to confuse the distinction made earlier that mechanical appliances are not synonymous with machine process. It means that individuals who are engaged in industrial employments are at one point or another in contact with the machine process. Clearly people at different levels in the occupational structure of industrial employment have a differential likelihood of being affected. That is, a person at a lower level in the occupational structure most commonly will be exposed to "the machine" in a routinized way such that the opportunity to see the "whole concert" of industrial activity as a process is not normally present. By contrast, persons in technical engineering, or supervisory positions would normally be able to see how various parts of the productive processes link together. There is an

uneven impact or incidence that is operative.[16] This is an important point in Veblen's theory and will be taken up when we consider The Engineers and the Price System.

As indicated, there is a differential impact of machine process within the industrial employments. These are quantitative, however, and the major qualitative difference is between the industrial and pecuniary employments. Persons situated in different types of occupations experience drastically different forces at work. This is so much so that Veblen never separates his discussion of the cultural incidence of technology from the institutional matrix within which it is found. In the case of the transition from the predatory to the pecuniary phase of culture, two quotations will serve to demonstrate, a) the relationship between the canons

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16. "The higher degree of training in such matter-of-fact habits of thought is accordingly to be looked for among the higher ranks of skilled mechanics, and perhaps still more decisively among those who stand in an engineering or supervisory relation to the processes." The Theory of Business Enterprise, op. cit., pp. 312-313.

verification and culture, and b) a relationship between institutions and technology that facilitates the growth of the latter. The first relates to the predatory culture of late barbarism.

> "The canons of reality, under which sense impressions are reduced to objective fact and so become available for use, and under which, again, facts are put into practice and turned to technological account, are the same canons of invidious distinction that rule in the world of property and among men occupied with predatory and pecuniary precedence. In effect men and things came to be rated in terms of what the (putatively) are - their intrinsic character - rather than in terms of what they (empirically) will do."[17]

The second quotation discusses the relationship of technology, property, and science, in a period of change.

> "And in proportion as such pecuniary accountancy comes to pervade men's relations, correspondingly impersonal terms of rating and appreciation will make their way also throughout men's habitual apprehension of external facts, giving the whole an increasingly impersonal complexion. So far as this effect is had, the facts of observation will lend themselves with correspondingly increased facility and effect to the purposes of technology. So that

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17. The Instinct of Workmanship, op. cit., p. 179.

> the commercial phase of culture should be favourable to advance in the industrial arts, at least as regards the immediate incidence of its discipline."[18]

The situation is that the institution of property exists in a dynamic relationship with the technology such that they both exert pressures upon other institutions and other aspects of culture. Where one is situated in the occupational structure, will affect the impact this relationship of forces has on a person or class.

> "The two classes of occupations differ in that the men in the pecuniary occupations work within the lines and under the guidance of the great institution of ownership, with its ramifications of custom, prerogative, and legal right; whereas those in the industrial occupations are, in their work, relatively free from the constraint of this conventional norm of truth and validity....when the agent's powers and attention are fully taken up with the work which he has in hand, that of which he has perforce to take cognisance is not conventional law, but the conditions impersonally imposed by the nature of material things."[19]

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18. Ibid., p. 186.

19. T. Veblen, "The Industrial and Pecuniary Employments," The Place of Science in Modern Civilization, op. cit., p. 317.

and,

> "If there is a considerable institutional discrepance between the upper and lower class in the community, leading to divergent lines of habitual interest or discipline; if by force of the cultural scheme the institutions of society are chiefly in the keeping of one class, whose attention is then largely engrossed with the maintenance of the scheme of law and order; while the workmanlike activities are chiefly in the hands of another class, in whose apprehension the maintenance of law and order is at the best a wearisome tribulation, there is likely to be a similarly considerable divergence or discrepancy between the speculative knowledge, cultivated primarily by the upper class, and the work-day knowledge which is primarily in the keeping of the lower class."[20]

This is the material basis of differences as it bears upon how technology and the habituation of ownership affect interpretations of experience.

A concrete institutional analysis of the conflicting tendencies of industry and business can be seen within the framework of the university.[21] The aims and ideals of

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20. Ibid., "The Evolution of the Scientific Point of View," p. 45.

21. T. Veblen, The Higher Learning in America, (Hill and Wang: New York, 1967).

businessmen and technicians are seen as contradictory to the aims and ideals of a university and each group detracts from the university, each in its own way. They are mutually reinforcing in this case in that they both detract from free and disinterested inquiry. Put simply, and ideally, the technician wants to know what is useful, the businessman wants to know what is profitable, and the scientist or scholar wants to know what is. That is to say, knowledge is viewed as an end in itself requiring no ulterior justification.

This establishes who the training in habits of thought, generated by machine process affects. We can now move to an examination of the content of this training. Veblen continually contrasts these habits of thought with those derived from the institution of business enterprise.[22] Machine process inclines those

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22. Veblen treats this training in the habits of thought derived from machine process in a dynamic way. He examines the relationships of man to the process and then contrasts this with those who are of the pecuniary employments. For a full treatment of this see Chapter IX, "The Cultural Incidence of Machine Process," The Theory of Business Enterprise, op. cit.

who work by it to view things in terms of opaque cause and effect. This produces a reluctance to accept anthropomorphic formulations and arguments de jure.[23] The training is a training in matter-of-fact, de facto explanations and argumentation. To the extent that such is the case, says Veblen, machine process in its current context is not conservative. It inclines large elements of the population to interpretations that do not accept explanations that run in terms of tradition or conventions (i.e. de jure).

Machine process progressively leads to a rejection of the notion of individual ownership.[24] The scale of organization of modern industry and the fact that the labour force becomes progressively interchangeable, (both of which may come about under the direction of profit seeking persons and institutional auspices), are

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23. These are Veblen's terms. I have tried to make their meaning clear, as they are a form of shorthand for the distinction drawn above.

24. Veblen viewed machine process as contradictory to any form of property ownership. In this case, he is pointing out how it is contradictory to individual ownership.

countenanced by the character of machine process. The scale results from a bent to greater efficiency, and the increasing lack of differentiation (in terms of skills) of the work force derives from the fact that machine technology does not depend for its efficiency on the individual characteristics or strengths of workmen. Mobility of the workforce tends to discourage large outlays of money on property such as houses. Hence, acceptance of the "natural rights" philosophy upon which ownership is based begins to deteriorate also.

Veblen also notes the formation of trade-unions, and comments on how the activities of these organizations reflect the impact of machine process. He sees the collective bargaining aspect of unions as a reflection of an acceptance of standardization and further as a rejection of the natural rights conception of free and individual contract. Veblen wrote that the contract demands had no legal standing which was also clearly a factor that meant union members were somewhat disinclined

to conventional or institutional explanations.[25] In spite of the rejection of natural rights philosophy and explanations, unions did not attack or reject its institutional counterpart - i.e. property.

Veblen examines the growth of socialist sentiment and asks how it is related to machine process. Although much of his discussion indicates that the two are integrally related he concludes that, "...modern industry is not so potent a factor in inculcating socialistic notions...(but that) the differentiation of occupations involved in modern industry selectively bunches the socialistic elements together....".[26] Even though he states that machine process is "not so potent a factor" he does say that it is loosely bound up with "socialist dissaffection". This exemplifies Veblen's

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25. Veblen died before the passage of the Wagner Act (1935) which legalized collective bargaining and the right to organize.

26. The Theory of Business Enterprise, op.cit., p. 353. Veblen provides an explanation for this in Imperial Germany and The Industrial Revolution, op. cit.. He sees the technological aspects of modern society generating the individualistic bias and the pecuniary aspects producing a set of social relations that inclines persons to collectivism. See Imperial Germany and The Industrial Revolution, op. cit., p. 134.

concern with the social relations of production.

Machine process comes to dominate our habits of thought with respect to knowledge. Veblen's theory of knowledge is very difficult, and all that can be gone into here is its barest outlines. This should be sufficient however to indicate the direction of his argument as it bears upon the subject under consideration. According to Veblen, knowledge is related to both occupational structure and to the nature of the technology. In any historical instance, the dominance of either technological forces or institutional forces is the result of a dynamic relationship that requires examination in each specific case. In some cases the institutional and technological aspects are complementary; in other cases they are contradictory. This means that we must ascertain the relevance of either of these two forces in terms of their ability to affect the habits of thought of persons in the society. Further, the impact of one or the other of these forces is not evenly distributed throughout the population. In the link between machine process and habits of thought, Veblen's notion is that the

machine process gives rise to habits of thought that imply a specific coneption of what the appropriate canons of verification of knowledge are. He posits the relationship between science and machine technology.

The notion that science focuses on processes rather than the characteristics that are the essence of the phenomena or objects themselves is the basis for Veblen's distinction between pre- and post- Darwinian science. Post- Darwinian science, falling under the impact of machine technology with its characteristic of being a well ordered, integrated process, is a science that focuses on the relationships between events and phenomena. Veblen points out that Darwin was not alone but that he is taken as the "great exponent". The importance is that Darwin shifted the focus and "...set to work to explain species in terms of the process out of which they have arisen, rather than out of the prime cause to which the distinction between them may be due".[27] This is a science

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27. The Theory of Business Enterprise, op. cit., p. 369.

of process. This emphasis in his own work comes out most clearly in his attack on the classical economics as being a static "equilibrium" approach. "But the scientists grew restless under the regime of symmetry and system - making".[28] Pre-Darwinian science is a science of taxonomy.

> "The characteristic feature by which post-Darwinian science is contrasted with what went before is a new distribution of emphasis, whereby the process of causation, the interval of instability and transition between initial cause and definitive effect, has come to take the first place in the inquiry; instead of that consummation in which causal effect was once presumed to come to rest."[29]

Not only does the focus of our scientific or scholarly activity derive from such sources, but also the methodology. The orderly, standardized, matter-of-fact aspects of machine process leave their imprint on the manner in which our inquiry is conducted. Important

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28. T. Veblen, "Why is Economics not an Evolutionary Science." The Place of Science in Modern Civilization, op. cit., p. 68.

29. Ibid., "The Evolution of the Scientific Point of View," p. 37, emphasis mine.

in this regard is the reinforcement of these factors by other features of culture such as the "price system" and accountancy - both of which incline towards the same general characteristics of standardization and quantification.[30]

This raises a critical problem in Veblen's theory of knowledge. The problem is that of class ideology and its relationship to knowledge appropriate to technology. Veblen indicates that both types of knowledge have been present throughout history. The technological knowledge, Veblen refers to as "matter of fact generalizations". This is present in all societies no matter whether the higher order theoretical

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30. There are two notions that Veblen associates with the science that immediately preceded this modern science of process. These are "...(1) equality (quantitative equivalence) of cause and effect; and (2) similarity (qualitative equivalence) of cause and effect". The first of these two, taken alone, derives primarily from accountancy and petty trade and results in Positivism. The second derives from the notion of handicraft that "nothing appears in the effect but that was contained in the cause". What this implies is that there is a direction or goal of processes in the sense that the craftsman fashions materials according to a plan. For an elaboration of these points see The Theory of Business Enterprise, op. cit., pp. 365-367 - particularly the footnote on pp. 366-367.

generalizations run in terms of organic cycles, divine malevolence or the "invisible hand".

> "The peoples of the lower culture "know" that the broad scheme of things is to be explained in terms of creation, perhaps procreation, gestation, birth, growth, life and initiative; and these matters engross the attention and stimulate speculation. But they know equally well the matter of fact that water will run down hill, that two stones are heavier than one of them, that an edge tool will cut softer substances...(etc.)"[31]

In recent times, with the ascent of machine process, these matter of fact generalizations have become dominant and have fostered the growth of science. This science though, as indicated earlier, has no respect for distinctions among men. It induces habits of mind that reject explanations whose legitimacy rest on custom and prerogative. Veblen concludes, therefore, that, in their present state, machine process and science are not

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31. T. Veblen, "The Evolution of the Scientific Point of View," The Place of Science in Modern Civilization, op. cit., p. 41.

conservative forces. However, the institutions of business enterprise require science and machine process, and herein lies one of the tensions in the relationship between the present institutions and the present technology.

Science (and scholarship) are contrasted with another type of knowledge. This other type goes under the name of Pragmatism. Pragmatic knowledge is knowledge that

> "...is such as is designed to serve an expedient end for the knower, and is here contrasted with the imputation of expedient conduct to the facts observed."[32]

This distinction of kinds of pragmatic knowledge serves Veblen as a means of distinguishing the idle myth-making of, say, the Pueblo Indians from the knowledge derived under the consciously pursued organization of facts to serve some goal. The latter is knowledge from which one derives "canons of expedient conduct". The

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32. T. Veblen, "The Place of Science in Modern Civilization," ibid., see footnote p. 9.

former need have "no intended bearing upon his conduct of affairs".[33] The systematization of these two types of knowledge occurs under different auspices. One is systematized by idle curiosity, the other by expediency.

Knowledge systematized under the canons of idle curiosity does involve "imputation of expedient conduct to the facts observed". However, as this systematization interacts with the matter of fact generalizations that are prevalent with machine process Veblen anticipates the disappearance of such imputation. Nevertheless remnants of it are still present. As this systematization of knowledge is progressively affected by machine process it becomes organized in terms of the habits of mind generated by that process. These forces lead to seeing things in terms of opaque cause and effect, matter of fact, blind cumulative causation, and process. The test of knowledge derived under the auspices of idle curiosity is not usefulness. This knowledge, says Veblen, is universally present in all known cultures, and is valued

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33. Ibid., p. 7.

as an end in itself without requiring recourse to ulterior justification.

Pragmatic knowledge of the sort that is designed to serve an expedient to the knower is subject to the test of usefulness. This is its ground of validity. But this is to be distinguished from knowledge that is technologically serviceable, i.e., "directed to the production of things that may or may not be of advantage to the agent."[34] This latter kind is, strictly speaking, technological knowledge and its validity is to be judged in terms of efficiency and serviceability - the criterion of production.

Veblen poses the distinction between science and

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34. Ibid., see footnote p. 13. In this footnote Veblen refers to what I have called technologically serviceable knowledge as "conduct". The explanation of this resides, I believe, in relating this to Veblen's conception of what are the components of industrial as opposed to pecuniary, activity. He does indicate that it is "workmanship directed" which tends to substantiate this conclusion. Unfortunately it is one of the Veblenian ambiguities that makes understanding exceedingly difficult.

pragmatism very succinctly.

> "Pragmatism creates nothing but maxims of expedient conduct. Science creates nothing but theories."[35]

An illustration may prove useful here. The point of the illustration is twofold; 1) to make the distinction clear in a practical case, and 2) to demonstrate the adherence Veblen maintained to his own theory.

Isadore Lubin relates this experience from when he worked with Veblen at the Food Administration during World War One.[36] The government posed the problem to Veblen that he should seek a solution to the shortage of labour for harvesting crops. Veblen's previous examinations of the American business economy had convinced him that <u>from the point of view of serviceability</u> there was great waste in the retail trade. Also the members

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35. <u>Ibid</u>., p. 19.

36. C. C. Qualey (ed.), "Recollections of Thorstein Veblen," I. Lubin in <u>Thorstein Veblen</u>, (Columbia University Press: New York, 1968), pp. 141-142.

of the Industrial Workers of the World union were a relatively unattached labour force. These seemed to Veblen the most available sources of labour. His memorandum to the Directors of the Food Administration therefore primarily involved two suggestions. These were, 1) a massive take over of retail businesses by the government, (thus reducing a large amount of waste by opening mail order houses); and 2) the striking of a strategic compromise with the I.W.W. (who were at that time under attack). When confronted by Lubin with the fact that Congressmen had to get elected and needed the support of the people whose businesses Veblen suggested be taken over, his response was that, "That's not my business. That doesn't concern me. They asked me what they might do and this is what I suggested they do."[37]

They had asked Veblen to solve a technological

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37. Ibid., p. 142. Apparently Lubin, in the early 1950's, ran into some difficulty about this report.

problem, not an institutional one. The technological solution, he would argue, derived from a systematic examination of the forces operative in this process. Pragmatic knowledge would have been framed in terms of some "canons of expedient conduct". Isadore Lubin was apparently more pragmatic than scientific - at least as compared with Veblen.

The last point in the relationship of technology to knowledge is the problem of the logic of enquiry or the logic of verification. Veblen did not see this logic as being dependent upon cultural circumstances, be they technological or institutional.[38] He makes this point in a footnote where he considers the "science" of Greek antiquity.

> "But it is to be noted that, (a) the relatively large and free growth of scientific inquiry in classical

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38. This raises one problem of the ambiguity of Veblen's use of the term culture. My understanding is that if this logic is prevalent in all cultures, then it cannot be attributed to, or dependent upon culture. This is precisely because of its universality.

> antiquity is to be found in the relatively peaceable and industrial Greek communities (with an industrial culture of unknown pre-Hellenic antiquity), and (b) that the sciences best and chiefly cultivated were those that rest on a mathematical basis....Mathematics is peculiarly independent of cultural circumstances, since it deals analytically with mankind's native gifts of logic, not with the ephemeral traits acquired by habituation."[39]

At this point in the examination there are three problems that require comment. All of the above arguments that are made by Veblen rest on the solid ground that habits of life give rise to habits of thought. About this there is no contention. The problem is simply that in his analysis of these relationships he does not provide any description of the mechanisms by which the process occurs. The transition from people's life experiences to their thought processes is not made clear.

There is also present what, for want of a better term,

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39. T. Veblen, "Why is Economics not an Evolutionary Science," The Place of Science in Modern Civilization, op. cit., p. 68.

can be called the "expert problem". Simply stated, do people who work with machines perceive the same logic as those who study machines? If it can be demonstrated that they do not, then can we ascertain the extent to which they are affected by it anyway? This is directly related to the criticism that Veblen pays very little attention to the social relations of production. His focus is very directly on the mechanistic aspect of interpretation.

Finally, Veblen takes note of, but does not examine in any detail, the strains upon individuals who are subject to divergent habits of life. He says this is,

> "...in the main a question of how nearly uniform or consonant are the circumstances of experience and tradition to which the several classes and members of the community are subject."[40]

Again, he simply recognizes it as a problem, but then leaves off. The problem is that if individuals are subject

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40. T. Veblen, "The Evolution of the Scientific Point of View," ibid., p. 39.

to divergent strains then how do we ascertain which will take precedence under what conditions?

Having set out the impact of machine process on knowledge and theories of knowledge it seems unnecessary to trace the same sets of tensions throughout other institutions. Veblen does examine religion, the higher learning, the leisure class, warfare, absentee ownership, peace, and patriotism from the same focal point. The important point to be recognized is that all elements of culture are affected and affecting this relationship between machine process and business enterprise.[41] It is this constant reference, the relationship of technology to the institution of business enterprise, that is Veblen's benchmark. This is his conception of the motive tension of the whole.

I will now move to an examination of this same relationship through a discussion of Veblen's evolutionary

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41. This interacting relationship is especially clear in Veblen's evolutionary perspective. See pages 37 to 63 below.

perspective. Veblen's most relevant work for this purpose is the Instinct of Workmanship. He begins his examination by stating his conception of the relationship just mentioned.

> "It is assumed that in the growth of culture, as in its current maintenance, the facts of technological use and want are fundamental and definitive, in the sense that they underlie and condition the scope and method of civilization in other than the technological respect, but not in such a sense as to preclude or overlook the degree to which these other conventions of any given civilization in their turn react on the state of the industrial arts."[42]

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42. The Instinct of Workmanship, op. cit., p. V, emphasis mine.

EVOLUTIONARY PERSPECTIVE

Briefly, Veblen classifies evolutionary development into the following phases; savagery (upper and lower); barbarism, the predatory phase (lower, middle and upper); and the pecuniary phase. This last phase of pecuniary culture encompasses modern times. The institutions of pecuniary culture are business enterprise and later absentee ownership. These two roughly correspond to what is sometimes called competitive and corporate capitalism. These are the dominant institutions in modern times.

> "To a greater extent than any other known phase of culture, modern Christendom takes its complexion from its economic organization. This modern economic organization is the 'Capitalistic System' or 'Modern Industrial System', so called. Its characteristic features and at the same time the forces by virtue of which it dominates modern culture, are the machine process and investment for profit."[43]

The two words in that quotation which seem to bear upon the argument here being made are "so called". They

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43. The Theory of Business Enterprise, op. cit., p. 1.

suggest, and the next few pages of the book support this contention, that to refer to modern times solely by the nature of its technology is to miss the major character and thrust of modern times. The character is provided by the "economic organization", which includes the technological and institutional components.

Veblen's categories of evolution are clearly similar to those employed by the early American anthropologist, Morgan. Savagery is the first stage and is characterized as being peaceful, non-competitive with consumption being collective. The argument being made is that savagery was not "savage" in the brutal sense. Scarcity and the lack of surplus for waste fostered collective consumption. Competitiveness and the state of "a war of all against all" would have simply resulted in extinction. The technology and industrial arts of this period were universally accessible and all persons could, at least passibly, perform almost all tasks. There was, in short, little division of labour, and no class distinctions. The community was small and Veblen

referred to it on occasion as communistic. "...the peaceable communistic regime of primitive savagery..."[44] However Veblen was not consistent on this point and on other occasions he rejected that description as inappropriate. "A primitive stage of communism is not known".[45]

This highlights the problem of conceptualizing ownership. Veblen does not regard the evolution of the institution of ownership as having occurred until the stage of barbarism. There is no institutional basis for any conception of individual ownership, much less the notion of collective ownership. This was the situation until sometime during lower barbarism. In his examination of "the Beginnings of Ownership" he finds that ownership first takes the form of individual

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44. T. Veblen, Essays on our Changing Order, L. Ardzrooni, (ed.), (A. M. Kelley: New York, 1964). This is a collection of essays all of which are written by Veblen. "The Beginnings of Ownership", p. 44.

45. T. Veblen, "On the Nature of Capital," The Place of Science in Modern Civilization, op. cit., p. 331.

ownership, that is, animistic extensions of self, or what he refers to as a "quasi-personal fringe". That is, self is defined as more than that which is enclosed by one's own flesh. Such features as one's breath and footprints are defined as somehow related to self. The magic practices that grow up at about this time reflect such conceptions. To perform magic on a person requires some link with the person, hence an article of clothing can be used in such ritual. The whole point is simply that there was not an institutional basis for a conception of ownership or self defined as property before the stage of barbarism, hence there could be no psychological perceptions of the world in those terms. Veblen's theory is based on the notion that habits of being give rise to habits of thought.

> "The idea of communal ownership is of relatively late growth and must by psychological (and

> I must add - institutional) necessity have been preceded by the idea of individual ownership."[46]

At this stage of evolution (savagery) man's material appliances may be little more than pointed sticks. However, his technological knowledge is already fairly sophisticated. The tending of cattle and crop care, although requiring little in the way of appliances, requires a great deal by the way of knowledge of how to turn these things to account. Although these things are immediate in savagery they gradually become more indirect as savagery is ending. By that is meant that from simply tending crops and animals, soil tillage and cattle breeding come to be

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46. T. Veblen, Essays on Our Changing Order, op. cit., p. 39. Parenthesis mine. Here we also have a view about the growth of conceptualization. For Veblen, it seems that we derive conceptions from our material existence which are then generalized from the individual case. An elaboration of this will be made later when an attempt is made to assess the institutional and technological aspect of Veblen's theory in relationship to his conception of man.

more characteristic expressions of the same economic activity.[47]

Veblen dates the passage from savagery to barbarism near the beginning of the neolithic era. Savagery is peaceful and productive, as already noted; but the by-product of this is the accumulation of wealth beyond that which is required to fulfill current needs. Population increases come about both in the community and its cattle. As the community expands in population from lower savagery, the likelihood of coming into conflict with neighbouring communities increases. This follows for a number of reasons. As the number of cattle increases so does the range land necessary for forage. Under these conditions the land comes to be construed as property. As an increase of wealth beyond needs comes to be prevalent the problem of disposition

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47. The difference between tending cattle, and breeding them, as well as the change from tending crops to preparing conditions for their improved productivity involves a dramatic change in the community's store of technological knowledge.

of surplus, alternately called the problem of distribution, becomes a consideration. The manner in which surplus is disposed of becomes a source for the eruption of conflict. Given these conditions and the growth of portable wealth, predation becomes an alternate form of livelihood. Cattle and women are the most conspicuous forms of portable wealth. Women can be turned to account as slaves, to produce more wealth for their captors. At least, such is the use to which they are put in this phase of barbarian culture. Much later in barbarism women are exempted from industrial pursuits in order to demonstrate the prowess of their owners.[48] Gradually then throughout this period predation comes into being and preogressively displaces the co-operative organization of productive potential. Division of labour, class distinctions, and ownership begin to form during the emergence of barbarism,

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48. "...the women so held in constraint and in evidence will commonly fall into a conventionally recognized marriage relation with their captor." T. Veblen, "The Beginning of Ownership," Essays on Our Changing Order, op. cit., - or for a fuller account see "The Barbarian Status of Women," ibid., pp. 50-64.

and competitive relations become dominant.

Veblen draws evidence for this analysis from many sources. For the early stages of evolution he draws upon archaeological evidence of the relative preponderance of weapons as opposed to instruments of production.[49] This provides one measure for him of the relative peacefulness or otherwise of the culture. In this regard he uses the evidence on the 'kitchen middens' of Northern Europe. Alternatively current anthropological studies are used to demonstrate the relationships of diverse elements of culture that he posits. For example, he refers to studies of the Kwakiutl and Eskimos in order to demonstrate how other aspects of culture are related to problems of scarcity, the division of labour and the elaboration of class distinctions. These provide Veblen with major sources of illustration also.

From savagery, then, we pass on to the predatory

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49. For an elaboration the specifications of this proposition see Instinct of Workmanship, op. cit., p. 127.

phase of barbarian culture. As indicated, this originates in the accumulation of wealth beyond that required for immediate consumption. Within this phase peaceful forms of production do not disappear, they simply cease to be the forms that best characterize the era. With the increase of wealth there then is present the material potential for differentiation of persons on a status or class basis. This fact is reflected in the sphere of productive activity. That is, some employments become more honorific than others and some employments contribute less to productive processes (We define productive processes as processes that result in the production of material or non-material goods to satisfy human needs). More simply, there is a material basis for the emergence of some form of leisure class. The basis of the distinction is between industrial and non-industrial classes. The leisure class grows up in barbarism and finds its fullest flowering in the later stages. Honorific employments are non-industrial employments, and work

comes to be defined as irksome.[50]

> "These non-industrial upper class occupations may be roughly comprised under government, warfare, religious observances and sports."[51]

The leisure class is only slightly discernible at the lower states of barbarism but Veblen notes that the elements out of which they emerge are present. It is interesting in this regard to note the sources of the difference between industrial and non-industrial activity and how Veblen sees that as being sex-linked in the division of labour.

> "Virtually the whole range of industrial employments is an outgrowth of what is classed as women's work in the primitive barbarian community."[52]

With all these changes in the economic and social

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50. In regard to the irksomeness of labour see "The Instinct of Workmanship and the Irksomeness of Labour", in Essays on Our Changing Order, op. cit., pp. 78-97.

51. T. Veblen, The Theory of the Leisure Class, (B. W. Huebsch: New York, 1919), p. 2.

52. Ibid., p. 5.

structure, different conceptions, values and ideals grow up that sanctify the altered circumstances. Religion sanctifies master-servant relationships. Gods become imbued with the characteristics of the leisure class. Prowess becomes a goal that is sought and the economic activity of consumption comes to play a major role in social stratification. Consumption provides the ways and means for a demonstration of prowess. Prescription, proscription, custom, and worldly wisdom become dominant in guiding and shaping the conduct and affairs of men. Virtually all aspects of the culture of barbarism are antithetical to the progressive development of technological potential. In fact, "...in later phases of culture....magic and religion....brought technological advance to a full stop".[53]

Within barbarism ownership develops in such a way that there comes to be two principles which tend to

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53. The Instinct of Workmanship, op. cit., p. 81.

conflict. The first principle is the right to ownership on the basis of prescriptive custom, that is, one owns what one possesses. The alternate principle is that of ownership of whatever one may seize by force. If this latter principle holds sway a system of "coercive exploitation" results. The example of this Veblen uses is the Asian monarchies. If however the former principle, based on prescriptive custom, takes precedence,

> "...it passes into the quasi-peaceable phase marked by secure prescriptive tenure of property and a settled nobility, and presently into a commercialized industrial situation."[54]

This latter case is the situational development that Veblen proceeds to examine.

There is a transitional period roughly from the end of the Dark Ages to the end of the Middle Ages. The era is marked by fairly peaceable relations with rights based upon ownership of property by prescriptive custom. However, if ownership based on prescription is threatened,

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54. Ibid., p. 202.

the principle of ownership based on force becomes active again.[55] It is within this period that handicraft production emerged.

Craft production developed at the interstices of the dominant system of property. Craftsmen, owning their own tools, produced goods that were sold. They were essentially outside the feudal relations of lord and serf. Craftsmen engaged not only in the technological aspects of production, but also in the pecuniary aspects. This system of production flourishes in the relatively peaceable culture, but as it developed so did guilds. These represented an increasingly obvious division of labour between those who engaged in production per-se and those who engaged in marketing. Those who engaged in

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55. Veblen characterizes the dynastic wars of continental Europe in this manner. These wars drove the craftsmen of Germany to Britain. This resulted in an increased level of technological sophistication for Britain because the state of the industrial arts was more advanced in Germany at that time. In Britain these men were more isolated from dynastic wars. As a consequence, there grew up an industrial situation which eventually surpassed that of continental Europe.

marketing assumed dominance. The ownership of tools and factories by the merchant placed craftsmen in the position of having to work for the merchants. This change, from the dominance of the technological aspects of production to the commercial aspects, occurred near the end of the feudal era. The case of Britain is somewhat unique in this regard. The change from handicraft resulted in commercialized industry and then the industrial revolution. There is a largely "peaceable" transition because of Britain's peculiarly insular position.

The old regime gradually lost hold and the merchant class assumed power. It was this class who owned the appliances of production and controlled the disposition of the product of economic activity. The era of the factory system and industrialization was ushered in under merchant class tutelage.

> "It is spoken of as the era of the factory system, of large scale industry, as the age of Capitalism or of free competition, or again as the era of credit economy. But as seen from the point of view of technology...it is best characterized as the era of machine industry or of the machine process."[56]

There are, of course, wide variations within this general framework of development. Differences in the relative rates of growth of any given factor has implications throughout. There also is the necessity of providing an explanation for the particular form of these development in various countries at different times. For example,

> "Central Europe ran through...the... cycle of industrial growth, commercial enterprise, princely ambitions, dynastic wars, religious fanaticism, exhaustion and insecurity, and industrial collapse and decay...."[57]

It is now possible to further elaborate the relevance Veblen placed upon the immaterial equipment of production. This it will be recalled, is the knowledge

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56. The Instinct of Workmanship, op. cit., p. 299.

57. Ibid., p. 246.

that provides the link between labour and technology and is the basis on which all productive potential exists. As indicated, the ownership and control of appliances too large or expensive to be owned by every workman passed into the hands of merchants. Veblen characterizes these people as those who start out to do something and end by sitting down to do somebody. Other than the Veblenesque character of that, it points humourously to what he develops analytically. From ownership of the technological appliances some things do follow. Ownership means that the owner has a usufruct on the community's immaterial equipment. If one owns the equipment by which knowledge is converted, with labour and raw material, into economic commodities, then one can profit oneself through the utilization of the community's collective immaterial equipment. Veblen discusses the nature of that knowledge and decides that it is collective, it is developed in a group context, transmitted by groups, and does not exist outside the framework of the groups. Any individual innovation is always slight compared to that which

already exists and goes into the new innovation. It is, therefore, somewhat contradictary to lay individual claims on that which is not an individual process. This is particularly so in light of the eighteenth century natural rights dictum of the right to "whatever passeth under one's hand".

Veblen wrote much on contemporary times and therefore an examination in greater detail of modern times should provide more information of the sort that is relevant in attempting to clarify the problem of the place of technology in his scheme of analysis.

> "Its /Business enterprise/ characteristic features,..., are machine process and investment for profit."[58]

Here Veblen sets forth the dynamic of modern society. The dynamic resides in the interplay of the tension between business and industry. This is an important distinction for Veblen and looms large throughout his work. Business is investment for profit and only bears upon industry

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58. The Theory of Business Enterprise, op. cit., p. 1. Parenthesis mine.

(production) in the sense that business, as an institution, is the ownership and control of industry for profit. However, from that fact so much follows that,

> "In so far as the theorist aims to explain the specifically modern economic phenomena, his line of approach must be from the businessman's standpoint, since it is from that standpoint that the course of these phenomena is directed."[59]

There are two sets of tensions deriving from business and industry. The first one is general, and the second relates specifically to the competitive phase of business enterprise. The general types would presumably still be present when business enterprise became corporate. In other words - there are contradictions in competitive capitalism that are

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59. Ibid., p. 4.

resolved in corporate capitalism, but there are contradictions in capitalism that are present in both.[60]

Ownership both shapes and is shaped by the dominant means of production. When production was based upon labour, ownership takes the form of slavery; when agriculture and cattle tending are dominant, land is the primary factor of ownership; and when capital is dominant, ownership finds expression in the mechanical equipment.[61] The important point throughout is not the

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60. The two most persistent tensions are; 1) the fact of scarcity, a necessary condition for profit, is progressively eliminated by an efficient technology, and 2) that competition generates monopoly, which should be more efficient, hence requiring a greater amount of time and energy to be devoted to a conscientious subversion of industrial efficiency, and/or a larger expenditure for tutoring the untutored in canons of conspicuous waste.

61. T. Veblen, "On the Nature of Capital," The Place of Science in Modern Civilization, op. cit., pp. 333-334.

material fact of ownership, but the consequences.[62]

The problem now is to present the organization of production during the changes in technology. Veblen did not see capitalism as a necessary development in the logic of machine process or technology. If anything, he regarded the two as somewhat antithetical. Capitalism did not arise with, or come after, mechanization. In fact, it grew up some time prior.

> "Capitalism did not take its rise coincident with the industrial revolution, although its best development and largest expansion may be within the machine age."[63]

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62. when "...the possession of the requisite material equipment...is...a matter of consequence, so as to seriously handicap the individuals who are without material means, and to place the current possession of such equipment at a marked advantage, then the strong arm intervenes, property rights begin to fall into definite shape, the principles of ownership gather force and consistency and men begin to accumulate capital goods and take measures to secure them." Ibid., pp. 331-332.

63. The Instinct of Workmanship, op. cit., p. 302. The institution is of recent occurance however, and on page 334 of "On the Nature of Capital," Veblen states: "So late an innovation, indeed, is this institution of capitalism... that...we find ourselves hesitating between denying its existence on the one hand, and affirming it as a fact of nature antecedent to all human institutions on the other hand."

Capitalism as a form of economic organization grew up during the height of handicraft technology. Its characteristic feature of investment for profit was present then. A number of other characteristics also associated with capitalism were present. These include ownership and control of the material equipment by other than those who worked with the equipment; a system of credit; the development and expression of the philosophy of natural rights; and the introduction of a price system.

Veblen argued that with the early change to capitalist production, the ideology of the liberal democrats was already outdated. The notions of liberty and equality were dependent upon a set of conditions which were once roughly approximated. The feeling was that their ideals could be achieved with the abolition of all rights and privileges, (particularly those of the aristocracy) except ownership. The ability of one man to encompass the knowledge and exercise it through the use of capital goods, without acting to the detriment of others, had already

passed.[64] Further, Veblen pointed out, the proposition was patently impossible after the industrial revolution.

Historically, there was first a division of labour between those who produced and those who marketed. This division of labour increased and resulted in the ownership of the material equipment by those engaged in exchange rather than those engaged in production. With this ownership went the control of the community's knowledge of ways and means. Production itself came to be defined not in terms of technology, but in terms of the principles of the market. The final unit of analysis is a profitable price. Veblen contends that in the last analysis the price system is based upon bargain.

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64. "But so precarious and transient was this approximation...(that) while the liveral movement....was still gathering head, the technological situation was already outgrowing the possibility of such a scheme of reform." Ibid., p. 340.

> "...advantageous bargain...is necessarily...a bargain between those who own (or control) industrial wealth and those whose work turns this wealth to account in productive industry."[65]

Within the period since the beginnings of capitalist development two types of employment have been evident. The first is pecuniary - referring to both finance and business.[66] This is capital that is invested for profit. Its fullest realization is expressed in Veblen's terms as "something for nothing". Both business and finance are concerned wholly with consumption. They differ not

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65. Ibid., p. 342.

66. Veblen's point about capital at large is expressed thusly, "He is, industrially speaking, without visible means of support". Alternately of business generally, "Of these strictly economic activities that are lucrative without necessarily being serviceable to the community, the greater part are to be classed as business." "Industrial and Pecuniary Employments," The Place of Science in Modern Civilization, op. cit., pp. 291 and 293 respectively.

in kind but in quantity.

> "The speculator may be treated as an extreme case of undertaker, who deals exclusively with the business side of economic life rather than with the industrial side....His traffic is a pecuniary traffic, and it touches industry only remotely and uncertainly; while the business man as commonly conceived is more or less immediately interested in the successful operation of some concrete industrial plant."[67]

The progressive withdrawal from industrial employments to the more purely pecuniary employments is the anticipated consequence. Veblen noted this early in his writings and later, in Absentee Ownership, affirms his anticipation. He notes at the time ($\bar{c}$ 1904) that this estrangement of businessmen from industry was finding expression in an increase in the number of experts hired and similar moves.[68] On the basis of the habits of

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67. Ibid., p. 291.

68. A twofold observation is in order there; one on the nature of business management, the other on the received economics. "But in the later development the connexion between the business manager and the mechanical process has, on the average, frown more remote; so much so, that his superintendence of the plant or of the process is frequently visible only to the scientific imagination." Ibid., p. 291.

thought derived under such institutional auspices the most honorific end is complete exemption from industrial enterprise. Veblen is most explicit about these non-industrial, honorific endeavours in the first chapter of The Theory of the Leisure Class.

Not all of this behaviour is without positive effects upon the state of the industrial arts and technology. Through a search for more profitable ways of production the development of more efficient technology is hastened along. Within the field of non-industrial endeavour, the logic of machine process facilitates combination or monopoly. It is, however, at the discretion of business-men to engage or not to engage in such activity. Usually combinations are completed long after it is technologically more efficient to do so. In behaving in such a manner, (that is in forming monopolies), the businessman increases efficiency by effectively "doing away with so much extra business".

Pecuniary employments then are based upon property and ownership. The production of goods is a means which, through bargain and sale, provide a livelihood. Production

is only carried on if it is profitable, and profit is not coterminus with the community's welfare.[69]

The opposite side of the same economic coin Veblen referred to as industrial employment. The differences between the two run in terms of occupation.

Those persons who engage in industrial employment include everyone from engineers to labourers. The differences within this group are based upon difference in technological knowledge. The point that Veblen makes, however, is that these internal differences are quantitative and these individuals, taken collectively, have more in common than they do with those engaged in pecuniary employments. All those engaged in industrial employment are concerned with production and are subject to greater or lesser degrees to the logic of the machine. Their activity is oriented towards serviceability rather

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69. Unfortunately Veblen died some few months before he could witness a major collapse of the pecuniary system in 1929. He did, however, witness the great era of industrial "state making" in railroads and steel; the era of Rockefeller, Morgan, and Carnegie; the organization of labour; and drastic inflation of the twenties.

than vendability.

Persons engaged in industrial employments possess, by virtue of their person, the technological knowledge by which production is possible. Those 'engaged' in pecuniary activity effectively own the same knowledge by virtue of ownership of the technological equipment.

This, then, characterizes the sequences to the historical present. We will now turn to a consideration of the case of Imperial Germany. An examination of a situation in which widespread grafting of an advanced technology on to an entirely different scheme of institutions should again provide a sensitive area for examining the role of technology in Veblen's work.

IMPERIAL GERMANY

In examining the case of Imperial Germany, Veblen begins by looking at the racial evolution of the Germanic peoples. He spends considerable time on this task. His conclusion is that,

> "...the difference between the neighbouring communities is necessarily a difference of habituation, not of racial or hereditary endowment, since there is no difference in this latter respect."[70]

This point ought not to be taken lightly because such a mode of approach is characteristic of Veblen.

In his analysis of the borrowing of technological elements by a culture, Veblen goes through all the benefits of not taking the lead in technological progress. What are some of these elements of advantage to the borrower? They include the fact that the

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70. Imperial Germany and the Industrial Revolution, op. cit., similarly in comparing the technological borrowing of Germany from England, Veblen sees no difference in racial endowment. "In point of race... there is no ascertainable difference between the Germans and the British." Ibid., p. 224.

borrowers pick up the most advanced methods of production and do not have to go through the wasteful process of slow evolution to that stage. Further there is no outdated equipment left in use that on the one hand is too expensive to do away with, but on the other hand acts as a drain on the aggregate efficiency of the industrial operations. In a similar manner the borrower picks up the new technology free of the institutional encumbrances under which it exists. In the case of Germany this means that,

> "These German adventurers in the field of business, being captains of industry rather than of finance, were also free to choose their associates and staff with a view to their industrial insight and capacity rather than in their astuteness in ambushing the community's loose change."[71]

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71. Ibid., p. 194. For an elaboration of the distinction between captains of industry and captains of finance see "The Industrial and Pecuniary Employments" in The Place of Science in Modern Civilization, op. cit., pp. 279-324. The distinction is essentially one of finance capital as opposed to corporate capital. Veblen does however see the growth of finance capital as an "unavoidable consequence" of capitalism. In this regard see Imperial Germany, op. cit., p. 204.

An important point and clearly reinforcing all the above material and institutional advantages of borrowing is the advantage gained by borrowing technological knowledge.

> "The first acquisition of this material knowledge is necessarily a slow work of trial and error, but it can be held and transmitted in definite and unequivocal shape, and the acquisition of it by such transfer is no labourious or uncertain matter."[72]

Veblen spends considerable time analysing the type of institutions onto which the borrowed technology was grafted. There was the dynastic state and with it, the relationship of subject and prince as opposed to the relationship of citizen and government. Dynastic states were small, their domain based on coercion and obedience. The relations between princes and subjects were those of paternalism on the part of the prince while solidarity and duty characterized the subjects. The dominant economic features were the mercantile interests, also characteristic of the later stages of handicraft in

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72. Ibid., p. 191.

Britain, and the landed aristocracy. There was, also, a peculiar conception of the 'State'.

The state, according to Veblen, was not seen in terms of the individualism that had come to dominate the British attitude to Crown and Commonwealth. Veblen noted a distinct inclination on the part of the British to temper their obedience to these institutions with self interest. In contrast, the Germanic peoples were more easily inclined to submission to autocratic regimes as a result of their recent dynastic experience.

In part for reasons of collective security and in part because "...modern technology does not tolerate a miniscular State..."[73] the German principalities drew together and formed a Tariff Union. Veblen sees this process at least at one level, as advantageous to the growth of industry. This arrangement provides for a self-sufficient economy, hence facilitating defense. It also permits growth within the union by breaking down the technological idiocy of small states, but this

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73. Ibid., p. 176.

setting up of tariffs is not without further consequences. The costs to the "common man" are dear. By not obliging specialization of production through competition, diversification was enjoined. However, from the standpoint of efficiency and serviceability, much of the production that was done within the Tariff Union would have been better done elsewhere. This indicates one of the persistent relationships between the institution of property and industrial technology. Veblen notes that,

> "Whereas, at the outset, the business management at least appears to be in the service of industrial enterprise, the inevitable outcome is a reversal of that relation; so that industry becomes a means to business...."[74]

Veblen was clear on his understanding of modern technology. From this understanding Veblen was able to ascertain the optimum conditions, given a limited historical choice, for the growth and development of these technological forces. Part of his orientation

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74. Ibid., p. 200, emphasis mine. This is taken from Imperial Germany, but I understand it to apply in the general case also.

then was to regard the relationship between institutions and technology in terms of the extent to which they reinforced, counteracted, or neutralized each other's characteristic bents.

We can now examine some of the general statements that Veblen made about the relationship between this set of institutions and the newly acquired technology. Then we can attempt to assess these examples in light of the overall concern of this paper.

> "...the new ways and means to be taken account of inavoidably alter the outline of policy to be pursued, without deflecting it from the ancient commeralistic aim of making the most of the nation's resources for the dynastic purposes of the state."[75]

and,

> "At least in its current phase....the modern state of the industrial arts is bound up with the administration by business methods and by businessmen. This means that, very presently, in any community that takes over this system of technology, the industrial system will be taken over by business interests and managed with an eye singly to the businessmen's pecuniary gain."[76]

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75. Ibid., p. 175, emphasis mine.

76. Ibid., p. 200, emphasis mine.

and finally,

> "...there has grown out of this new industrial regime itself, in part by direct consequence of its technological character and in greater part by way of use and wont conditioned by the industrial efficiency of the new regime, a broad fringe of usages, conventions, vested rights, canons of equity and propriety, that are no part of the new state of the industrial arts, but that are often all not easily separated from it or from its usufruct by the community whose work it is."[77]

In the first quotation above the point Veblen makes is that the new technology provides a more efficient means, thus facilitating the use of resources and conveying power to those who own and control such means. From this it does not follow that there will be any necessary change in the aims or ideals pursued. Indeed, besides there being no logical necessity for such a course, Veblen here presents an example of an empirically opposite result. That is, a change of means does not logically, or in this case empirically, direct a change

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77. Ibid., p. 121, emphasis mine.

of goals. It is this latter aspect of goals, ends, aims, or ideals, that is the basis of social structure.

What is important is that the technology is taken over into a scheme of habituation that does not provide for a free and uninterrupted interplay of the new forces of technology. The institution of ownership conditions the way the technology will be picked up and the ends toward which it is directed. As indicated by Veblen, the institution of business enterprise may at first be the servant of the new technology, but that this is transitory. Eventually industry is carried on for the purpose of business. From the last quotation it is clear that the nature of the technology conditions the "scope and method of civilization" but that these things cannot be abstracted from the institutional web of habituation that thwarts the bent of technology itself to provide a direction and context to the technological ways and means.

There is one remaining problem. Veblen does state that technology does have an internal logic and direction.

It does condition many aspects of culture, and it is in contradiction to the institution of ownership, at least in its present state. The problem is to ascertain what Veblen predicted, and why.

Veblen is certain that with machine technology the imperial institution is in trouble because the habits of thought generated by machine process are antithetical to the imperial institution. Without the technology it is impossible to achieve imperial goals. Within Modern Christendom Veblen sees a general direction of change. The nature of that drift is toward "matter - of - fact".

> "Showing itself on the institutional side, e.g., in a nearly universal avowed repudiation - often futile enough in practice - of all personal discrimination and prerogative...in an impersonal, mechanical conception of objective things and events. So the most characteristic habit of thought...is what has...been called the mechanistic conception. Its practical working out is the machine technology, of which the intellectual precipitate and counterpart is the exact sciences. Associated with

> these in such a way as to argue a correlation, of the nature of cause and effect, is the modern drift toward free and popular institutions."[78]

However in the case of Imperial Germany Veblen suggests that,

> "They may yet be able to effect such a retreat by recourse to so drastic a reaction in their civil and political institutions as will offset, presently neutralize, and eventually dispel the effects wrought by habituation to the ways and means of modern industry and the exact sciences."[79]

Veblen is quite confident about the necessity of the collapse or disintegration of that unstable cultural compound called Imperial Germany. One has doubts as to Veblen's confidence that Germany would follow the drift of the other nations of Modern Christendom, precisely because as the last quotation indicated, he did indicate

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78. Ibid., p. 268.

79. Ibid., pp. 236-237.

another alternative.[80] He provided institutional and technological reasons for the demise of the imperial institution, but does not suggest that one alternative has any greater likelihood than another.

The only thing one can conclude is that habits are more likely to change forward (or backward) than the technology is to change backwards. No satisfactory resolution of the dilemma can be had at this point.

Aside from the concrete case of Imperial Germany, there are the predictions deriving from The Engineers and The Price System. This may be more fruitful ground for

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80. The last quotation plus a statement which, in the light of German Fascism, sounds very prophetic indicates the depth of Veblen's pessimism about the outcome. "When it happens that an individual gifted with an extravagant bias of this character is at the same time exposed to circumstances favouring the development of a truculent megalomania and is placed in such a position of irresponsible authority and authentic prerogative as will lend countenance to his idiosyncracies, his bent may easily gather vogue, become fashionable, and with due persistence and shrewd management come so ubiquitously into habitual acceptance as in effect to throw the population at large into an enthusiastically bellicose frame of mind. Such is particularly apt to be the consequence in case of a people whose historical traditions run in terms of dynastic strategy and whose workaday scheme of institutions is drawn on lines of coercion, prerogative and loyalty." Ibid., p. 60.

examining the reasons he gives for, and the predictions he makes about change. To reassert the focus of this paper, I feel that the source of, and direction, predicted for social change is relevant in assessing the role of technology in Veblen's work. We have looked at a concrete case of Imperial Germany, and will now consider a theoretical case.

PREDICTIONS

It does seem clear so far that Veblen viewed the contradictions between the institution of ownership and technology as being of such a nature that they required resolution. Ownership and the technology generate forces that are antithetical to each other. He sets forth his expectation of the outcome in two places; the concluding chapter of The Theory of Business Enterprise, and The Engineers and The Price System. Of this later work Professor Dowd comments,

> "...his position was not so much a programme of action as an ironic statement of why such a programme would be utopian."[81]

Even if such a programme is an ironic statement, Veblen does make a number of relevant points that do follow directly from his other work. This work constitutes his analysis of an alternative to the continued dominance of business principles. Veblen's

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81. Dowd, op. cit., p. 153.

alternative is revolutionary overturn and a soviet of technicians. Irony notwithstanding it is an important analysis and warrants consideration.

Veblen sees popular discontent as the necessary result of business strategy. Leaving manpower and other resources idle gives rise to discontent.

> "But they (the Guardians of the Vested Interests) see no help for it; and indeed there is no help for it within the frame-work of "business as usual" since it is the essence of business as usual."[82]

Veblen goes on to elaborate the essential lines of a necessary revolutionary strategy. (He did so at a time when America was undergoing a large "red scare", which Veblen addressed himself to in an article entitled "Dementia Praecox"). The manner in which he outlines a revolutionary strategy illustrates the difficulty of cutting through his stylistic idiosyncracies. First Veblen states that the Vested Interests in America have nothing to fear "just yet",

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82. The Engineers and The Price System, op. cit., p. 116.

and then he goes on to write his own manifesto for change under the guise that he is giving the reasons why there need not be any fear.

> "...there is no single spot or corner in Civilized Europe or America where the underlying population would have anything to lose by such an overturn of the established order as would cancel the vested rights of privilege and property...."[83]

Veblen was favourably disposed toward such an action but he is clear that it may not be necessary to take to the street with guns.

> "The move...need, in effect, be nothing spectacular; assuredly it need involve no clash of arms or fluttering of banners, unless, as is beginning to seem likely, the Guardians of the old order should find that sort of thing expedient."[84]

> "The main lines of revolutionary strategy are lines of technical organization and industrial management."[85]

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83. Ibid., p. 103.

84. Ibid., p. 143.

85. Ibid., p. 103.

Veblen does not see the likelihood of overturn as being even a remote possibility under the then existant state of affairs.[86] He even suggests that the present system could collapse fairly seriously without much fear because there is no organized group prepared to take over. Ironically, he died only a month or two before the Great Crash of 1929.

The group he saw as structurally important was the technicians and engineers. His analysis of the lack of business efficiency and his statements that those who take over must be more efficient, incline him to choose this group of people. He does reflect on the current state of their consciousness and refers

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86. Ibid., p. 97. "The nearest approach to a practicable organization of industrial forces in America, just yet, is the A.F. of L., which need only be named in order to dispel the illusion that there is anything to hope or fear in the way of a radical move at its hands."

to it as a "hired man's loyalty",[87] But apparently he had cause to believe or hope that this would change.[88]

The mechanism by which this takeover is to occur is a general strike supported by all the industrial class. The engineers would then organize the whole "industrial concert" with the goals of maximizing efficiency and establishing equality in the distribution of the products of the industrial machine. Herein lies a problem of direction.

> "In short, so far, as regards the technical requirements of the case, the situation is ready for a self-selected, but inclusive, Soviet of technicians to take over the economic affairs of the country and to allow and disallow what they may agree on; provided always that they live within the requirements of that state of the

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87. Ibid., pp. 129-130. "The technicians are a "safe and sound" lot, on the whole; and they are pretty well commercialized, particularly the older generation, who speak with authority and conviction, and to whom the younger generation of engineers defer, on the whole.... And here-in lies the present security of the Vested Interests...."

88. Daniel Bell speculates on this point in his introduction to The Engineers and The Price System. Joseph Dorfman's account of this may also be useful to the reader.

> industrial arts whose keepers they are, and provided that their pretensions continue to have the support of the industrial rank and file; which comes near saying that their Soviet must consistently and effectually take care of the material welfare of the underlying population."[89]

One problem with this, however, is that the organizational form Veblen suggests for this Soviet, - a Soviet that will have abolished all rights of absentee ownership, which is roughly equivalent to bourgeous property, - is that of a "central directorate". Historically such an organizational arrangement has been particularly susceptible to public pressure. The question is how does the 'underlying population' let the engineers and technicians know if they are serving everyone's needs. According to Veblen: since,

> "...mechanical technology is impersonal and dispassionate, and its end is very simply to serve human needs, without fear or favour or respect of persons, prerogatives, or politics."[90]

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89. Ibid., p. 149.

90. Ibid., p. 126.

then an organization which employs the technology to achieve such a result will abolish conflict. That is to say, if there is abundance in accord with what is technologically possible and this abundance is equitably distributed, then this area of activity is removed from the arena of politics, i.e., conflict. Alternatively this central directorate will be the institutional arrangement only for production. Disputes that arise in other spheres of social life would have to be resolved through different mechanisms such as political organizations. There would be an explicit recognition that the new form of production is the most efficient and that conflicts ought to find another arena of resolution.

There is, however, considerable ambiguity about Veblen's prediction of the future. He did isolate the highly skilled technicians and engineers as being the point of weakness, provided they acquired some sort of revolutionary consciousness.

The problem of control of the Soviets is not resolved by Veblen, and one can only extrapolate from

some of his more general principles. Professor Dowd's comment about this being a utopian work seems accurate. In comparing The Engineers and The Price System to Veblen's other work one is left with a grave feeling that he is writing with a lack of conviction. This is the alternative to the more dismal predictions he makes in The Theory of Business Enterprise.

The other argument that Veblen does make regarding change was written at a much earlier date. In "The Natural Decay of Business Enterprise" Veblen makes his case very clear.[91] "Natural" means the continued dominance of the culture by business and the working out of these principles over time. As further indicated by the title it is evident that Veblen saw the contradictions of business enterprise resulting in the decay of that institution. He is most explicit in his work that capitalism must be seen not as the final stage of human evolution, but as part of a historical sequence

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91. The Theory of Business Enterprise, op. cit., Chapter 10.

of which it is simply a transitory part.

"The quest for profits leads to a predatory national policy".[92] Veblen sees this as the likely outcome of business enterprise. With it goes the military training which reinforces the habits of mind generated by business enterprise. The important habit of mind being essentially a trained acceptance of the legitimacy of super and subordination. Other factors reinforcing this same trend are the press, periodicals, and school systems. However,

> "Once the policy of warlike enterprise has been entered upon for business ends, these loyal affections gradually shift from the business interests to the warlike and dynastic interests, as witness the history of imperialism in Germany and England. The eventual outcome should be a rehabilitation of the ancient patriotic animosity and dynastic loyalty...(which) may easily be carried so far as to sacrifice the profits of businessmen to the exigencies of the higher politics.[93]

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92. Ibid., p. 398.

93. Ibid., p. 395.

Veblen notes this occurance in the case of America. In Absentee Ownership he refers to this as 'national graft' or imperialism.[94]

He, therefore, poses the problem that the logical outcome of business enterprise ultimately results in the subversion of private by nationalist ends. This he sees as the best immediate remedy for the peaceable habits of mind generated by machine process. Patriotic, not peaceable people defend imperial ties. Veblen contends that these two divergent strains of dynastic politics or peaceful production with machine process culminate in the demise of business enterprise. Such is the case regardless of which set of forces holds sway.

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94. T. Veblen, Absentee Ownership, (Beacon Press: Boston, 1967), p. 442.

INSTINCTS

So far this paper has addressed itself to the characteristics and relationship of technology and institutions. The major institution examined was property in its various historical expressions. However, as was indicated, there remains one other major aspect of Veblen's work that recurs frequently. This is the question of instincts and their relationship to Veblen's conception of technology. The emphasis on instincts is prevalent in all of Veblen's work, and is most noticeable in Imperial Germany and The Instinct of Workmanship. This latter work was regarded by Veblen as his most important theoretical book.

The relationship of technology to man's nature will be our major focus, since it is the role of technology that is the paramount concern here. The importance of the relationship can be seen throughout Veblen's work. Veblen indicates that in the general

case all technology is "dependent" upon man's instincts and specifically that machine process is congruent with human nature.

> "Yet the state of the industrial arts is dependent upon the traits of human nature, physical, intellectual and spiritual, and on the character of the material environment."[95]

and,

> "In their elements, therefore, their premises and logic of the machine technology are in every man's mind, although they may often be overlaid with a practically impermeable crust of habits of thought of a different and alien sort."[96]

In these two quotations the importance of such an
an investigation becomes more evident. It raises the question anew of the sources and direction of change. Veblen's analysis of institutions seems sound enough, yet by his own words he tells us that it is based upon

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95. T. Veblen, "On the Nature of Capital," in The Place of Science in Modern Civilization, op. cit., p. 349, emphasis mine.

96. Imperial Germany, op. cit., p. 190.

some conception or analysis of the nature of man. The first of the two previous quotations seems to present a contradiction in that throughout, Veblen is at pains to demonstrate the effects of technology on man's habits of thought.

Our task will be to ascertain what man's nature is. This resolves itself into the question of what Veblen felt was the content of man's basic instincts. Before this can be approached it is necessary to ask first what are the general characteristics of instincts. Before this can be approached it is necessary to ask first what are the general characteristics of instincts? How do they affect our lives? How are they transmitted? How do they vary between individuals and groups? How do they change or remain the same?

For Veblen instincts were not tissue-linked reflex or tropismatic activity. They are conceived of as being secondary characteristics of a vague and general nature that involve the organism as a whole. Instincts are

teleological. By that Veblen meant that man has basic characteristics (aptitudes, instincts, or bents) that more or less consistently provide the motive force for the realization of some objective. The realization of these goals involves conscious activity. This, to Veblen, means that "instinctive behaviour is intelligent to some degree".

These instincts are to be seen as "irreduceable traits of human nature". They are to be distinguished from each other in terms of the ends towards which they direct activity. However, instincts often act in concert, which means that they may reinforce or counteract the realization of other instincts. Veblen notes that it is often difficult to ascertain which of the instincts is motivating a given sequence of behaviour. To the extent that instincts do involve conscious adaptation (intelligence) they are subject to contamination or displacement. This means that the motive force of the instinct may be diverted to serve other goals. For example, a concern for adequate provision for the upcoming generation and patriotism are, under different conditions, expressions of the same basic

instinct.

Races, according to Veblen, differ little in their instinctive make-up. The physical variation between races is by far larger and more evident. Although instinctive dispositions vary little, their working out over long historical periods does amount to cumulative differences of considerable magnitude. However, Veblen notes that basic differences in instinctive make-up counts for less than institutional and environmental factors. Heredity is seen as a factor of group transmission, but differences between races are smaller than differences within any given race.

The more general instincts are characterized by the ease by which they are displaced through habituation, but

> "...in all races and peoples there should always persist an ineradicable sentimental disposition to take back to something like that scheme of savagery for which their particular type of human nature once proved its fitness during the initial phase of its life history."[97]

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97. The Instinct of Workmanship, op. cit., p. 20.

Undoubtedly there are many problems with Veblen's conception of human instincts, particularly in the light of current genetic theory. For the present inquiry this is of little concern. What is relevant is how this conception of man relates to technology, and what problems arise from conceiving of man in such a manner.[98]

The two most basic instincts are called workmanship and parental bent. One more, idle curiosity, is also basic, but its emergence is dependent upon the accumulation of "surplus" resources.

Workmanship is characterized by serviceability. Serviceability is, as Veblen puts it, the 'functional content' whereas the ends to which this will be put are "...made worthwhile by the various other instinctive dispositions".[99] Workmanship is primarily a means, a way

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98. The characteristics of instincts are elaborated by Veblen in the Introductory chapter to the Instinct of Workmanship.

99. Ibid., p. 31.

by which men turn to account whatever is at their disposal. The instinct of workmanship is that characteristic that leads men to take pains with something. It includes diligence, thrift, and abhorrence of waste.

The most closely related instinct to workmanship is called parental bent. Parental bent greatly re-enforces and overlaps with workmanship. So much is this so that Veblen is often pained to be specific which of them produces certain results. He indicates that the result is usually a compound of the two and seldom a matter of exclusive domination.[100]

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100. Veblen often finds it difficult to distinguish between the two in terms of their effects. Both, for example, abhor waste, and both are of prime importance among the instincts. "Doubtless this parental bent in its wider bearing greatly re-enforces that sentimental approval of economy and efficiency for the common good and disapproval of wasteful and useless living that prevails so generally throughout both the highest and lowest cultures..." Ibid., p. 25, and,
"It might on the other hand be maintained that such an animus of economy is an essential function of the instinct of workmanship, which would then be held to be strongly sustained at this point by a parental solicitude for the common good." Ibid., p. 27.

Parental bent is general in its orientation, as are all the instincts. It refers to more than simply a desire to produce and care for offspring. This instinct expresses itself in a concern for the collective welfare of the community. If workmanship expresses itself in production for the present, parental bent expresses itself in a sense of providence; a concern for the next generations.

Very little more can be said on the native (basic) content of parental bent except to say that its inclination is toward a collective. The term parental indicates, only on a familial level, what is meant to apply to the whole community.

The instinct of idle curiosity forms the last of the three basic instincts. It seems most characteristically the trait that makes us human. It is very much a higher order function in that, "...idle curiosity takes effect only within the bounds of that margin of surplus energy

that comes in evidence....".[101] This instinct can be best expressed simply as man's drive to know. Idleness is taken to mean that this instinct is not directed to ulterior or utilitarian ends.

There is one problem that has become evident already. Veblen characterizes these as basic instincts but he also notes their appearance and, in the case of idle curiosity, disappearance in relation to scarcity. One wonders why he needs to characterize man's behaviour in terms of instincts when at many points his "institutional" explanation seems adequate. For example, he writes,

> "This savage mode of life, which was, and is, in a sense, native to man,

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101. Ibid., p. 86. "It seems that only after the demands of the simpler, more immediately organic functions, such as nutrition, growth, and reproduction, have been met in some passably sufficient measure; that this vaguer range of instincts which constitute the spiritual predispositions of man can effectually draw on the energies of the organism and go into effect in what is recognized as human conduct." Here Veblen was not only positing a means of distinguishing man from the lower order animals, but he was also positing some hierarchy of needs.

> would be characterized by a considerable group solidarity within a relatively small group, living near the soil, and unremittingly dependent for their daily life on the workmanlike efficiency of all the members of the group. The prime requisite for survival under these conditions would be a propensity unselfishly and impersonally to make the most of the material means at hand and a penchant for turning all resources of knowledge and material to account to sustain the life of the group."[102]

What Veblen apparently wants to suggest is that man must have had the instincts of workmanship and parental bent in order to survive under those material conditions. However, it seems as though he commits a naturalist fallacy of reading from the material conditions back to a necessary nature of man. It is necessary because if man did not have such a nature he would not have survived. There is no possibility of negative evidence. However, our concern here is not to verify or refute Veblen, but to examine a relationship

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102. Ibid., pp. 36-37.

in his work. This point is only mentioned as a weakness in his conceptualization.

Whatever his justification or explanation of instincts, the point remains that Veblen has a conception of man's nature. Man's native characteristics are easily diverted from their goals, but they are also resilient. Under similar conditions they will reassert themselves according to their native bent. Man is a productive animal, turning "whatever is at hand to account" with an eye to serviceability. Man is an animal that takes heed of and cares for the lot of others. Finally, man is an animal that, whenever surplus energy permits, turns his thoughts to the search for unifying explanations of all he encounters.

As indicated, Veblen felt that "the state of the industrial arts is dependent upon the traits of human nature". These same traits play a role in the growth of institutions.

> "A genetic inquiry into institutions will address itself to the growth of habits and conventions, as conditioned by the material environment and by the innate and persistent propensities of human natures."[103]

'Instincts' provide Veblen with a way of placing man in the picture. Man is another variable that affects and is affected by the relationship between institutions and technology. As should be fairly evident, instincts also provide an opportunity to provide a normative content to what Veblen prefers to refer to as opaque, matter of fact process.[104]

The link with technology derives from the congruence of its characteristics with the characteristics of the instincts. Workmanship and parental bent are most important in this regard. Workmanship flourishes in peaceful conditions. As indicated in the explanation of the era of handicraft, workmanship reasserts itself

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103. Ibid., p. 2.

104. Most writers who address themselves to Veblen's conception of instincts come to a similar sort of conclusion. However, a wide variety of interpretations exist as to why Veblen should choose these particular instincts.

wherever peaceful conditions prevail. This leads to a growth and elaboration of technology which produces a changed relationship between the technology and social, economic, and political institutions.

Since savagery, no type of technology has been more congruent with the native bent of workmanship than has machine process. Historically, changed forms of production have pushed forward while the elements of habituation have retarded this forward thrust. Habit means continuation of derived experience. As such it is not a progressive force. Technology is not an institution.[105] We may have some argument about whether one institution is at a higher stage of evolution than another, but in the case of technology the criteria are clear. There has been a progressive increase in the productive potential, and greater

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105. The last three sentences contain the basis for Veblen's theory of "cultural lag". He is more specific and concrete in other places, but the nation of habit and its relationship to technology is, I think, the basis of that theory.

efficiency of the technology. As Veblen points out "the clay vessel does not bear up to the iron pot".

Man as an active agent, with certain characteristic bents, both affects and is affected by both the institutional and technological factors of culture. The role played by man and the effects this relationship has on him is a matter of investigation and cannot be ascertained by any general rules. Man's nature and the technology must, however, be seen as progressive agents in their current institutional setting. Both countenance serviceability as opposed to the institution of property which produces quite the opposite effect. Veblen is most clear on this.

> "The all-pervading institution of private property...(grew) out of the self regarding bias of men in their oversight of the community's material interests."[106]

An institution, it will be recalled, is simply a

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106. T. Veblen, The Instinct of Workmanship, op. cit., see footnote at bottom of page 24.

prevalent habit of thought. One of the first institutional changes and by far the most over-riding one is that of private property. Since the earliest period of man (savagery) this institution has been dominant. This continues to the present. This and many of its attendant institutions which find their basis on the same principle tend to act in such a way as to pervert and misdirect man's basic nature. It is only through the unremitting pressures to exert themselves according to their native bent that man's instincts play any role in the historical growth of institutions. The contradiction between workmanship finding expression in technology, and the ownership and control of property provides the major impetus for historical change. Veblen sees the growth of institutions within the framework of a given form of property expression (e.g. land) as being a slow working out of evolutionary sequence. The change between forms (e.g. land to capital) he sees as being very rapid evolutionary changes - revolution being a special case of evolutionary development. The one within, the other

between, historical expressions of the institution of private property.

We find Veblen at his critical best when he considers current property relations. In The Theory of Business Enterprise Veblen sets forth the basic contradiction of recent times. The contradiction is between machine process and investment for profit. This later characteristic is the most recent evolved form of the institution of property. The effects of this institution are prevalent in all aspects of our life. He most clearly examines the relationship between property and warfare in The Nature of Peace and the Terms of Its Perpetuation. His conclusion indicates the intimacy of the relationship and further the procedures necessary for eliminating warfare.

> "This current scheme of investment, business, and sabotage, should have an appreciably better chance of survival in the long run if the present conditions of warlike preparation and national insecurity are maintained, or if the projected peace were left in a somewhat problematical state, sufficiently

> precarious to keep national animosities alert, and thereby to the neglect of domestic interests, particularly of such interests as touch the popular well-being."[107]

and,

> "...it should evidently be part of their /projectors of peace/ endeavours from the outset to put events in train for the present abatement and eventual abrogation of all rights of ownership and of the price system in which these rights take effect."[108]

Instincts then provide the moral, or evaluative, basis of Veblen's work. Instincts are relevant to the strain between technology and institutions in the ways indicated, but they are too prominent in Veblen's work for this to be the total explanation. Their relevance is in providing a foothold for Veblen's attack on elements of culture that he considered inhuman. This

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107. T. Veblen, The Nature of Peace and the Terms of Its Perpetuation, (B. W. Huebsch: New York, 1919), p. 366.

108. Ibid., p. 367.

is very important for an appreciation of Veblen's work.

There are three basic instincts. These are workmanship, parental bent and idle curiosity. Viewing these as basic to man, natural in that sense, Veblen saw them as being most prominent in a "pure" form at the earliest stages of man. The content of this era can be briefly characterized by words such as peaceable, harmonious, productive, etc. Such was also the nature of the instincts. Regardless of the historical, or in this case prehistorical, accuracy of such statements or conclusions, the assertions are very important. The reason they are important is because they relate most directly to an integrated study of man. The proposition of man's "basic" nature, is a necessary beginning for most social sciences. Once one has a conception of what man is, then one can examine what sort of institutional structures repress, constrain, liberate, pervert, or frustrate that basic nature. Certainly in the growth and development of political economy this is a very important beginning. One can think of, say Hobbes, who,

as a political theorist did similar sorts of things. The content of man's basic nature and basic state differed for Hobbes, but both Hobbes and Veblen had similar problems once that first step was taken. The relationship of the individual to institutions differs, given different starting points. On the one hand the state is invoked as a method of preventing man's basically brutal nature from asserting itself according to its native bent; on the other hand the search is for institutions that will initiate a liberation of our basic nature. In such a case one's initial presuppositions, regarding the nature of man are crucial.[109]

Along with all of this goes Veblen's disdain for competitiveness and waste, both characteristics he finds to be inherent in the nature of business enterprise.

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109. One may assume that it is man's lack of a basic nature that is basic. Man's evolving nature still presents problems for the theorist who addresses himself to the relationship between man and his institutions.

Veblen's preference clearly lies in the area of co-operation and serviceability.

One of the problems one has dealing with values is that at one level or another, they have a tendency to assume universalistic forms, hence making it incredibly difficult for anyone to disagree. For a specific example of the disdain Veblen has for waste one need only refer to the article on "Sabotage" in The Engineers and The Price System or alternately to The Theory of Business Enterprise.[110] In all cases he regards unused technological capacity in the presence of human need as waste. It does seem evident that within the framework of the economics of the "price system" such a procedure can be justified as somehow necessary. Further, he is constantly assessing the merits of the form of economic organization as to its serviceability for the "underlying population: or "common man". Veblen

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110. The most concise summary of virtually all the basic evils that Veblen characterized as "business as usual" can be found in Imperial Germany, op. cit., pp. 123-130.

does find that there is a sense of perpetual failure in this regard.

Concerning the direction of evolutionary change Veblen pointed out that his views on evolution did not imply any notions of amelioration or betterment. He viewed such notions as being essentially non-scientific; they do not take their flavour from the canons of verity imposed by machine process. The scientific view of evolution is that which is characterized by opaque matter-of-fact causal sequence. Clearly some changes he sees as being more desirable than others, but one cannot ascertain relative desirability by regarding the sequence of evolutionary growth.[111] The evolution of human labour, within the institution of property, from slavery to serfdom to wage labour does not indicate any sense of historic amelioration. The advance of technology

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111. This was somewhat of a problem for the Social Darwinists. To imbue evolution with an inbuilt moral growth means to accept what is now as the best, because it is the most recent.

to more and more efficient ways of production tells us little about the lot of man. As Veblen pointed out technology is simply a means, for good or ill, and as such may improve the lot of the "common man" or otherwise. There is no necessary moral imperative built into the notion of evolutionary sequence. All that one can ascertain is that there is change, both within and between forms, and it is change that characterizes human history. Moral progress is not coterminous with evolutionary sequence.

The forces that produce the change vary with each evolutionary stage. In our present circumstance Veblen sees the contradiction between the industrial and the pecuniary occupations as being paramount in this regard. They are representations of the contrary elements of machine process and investment for profit; i.e., the technological expression of man's basic bent toward workmanship and the institution of property.

A major point of value for Veblen expresses itself most fervently in reaction to the values of business enterprise. Veblen saw as a rational counterpart of

business enterprise, and an empirically demonstratable relationship, the relative valuation of all things in terms of their earning capacity or monetary worth. Any other goals may be considered after the prerequisite of monetary return had been satisfied. The organization and functioning of our productive system ceases when that prerequisite can no longer be met. Even in the presence of human want and need the productive apparatus under the aegis of business enterprise is producing for profits not producing for the satisfaction of human wants and needs. This is where the contradiction between business and industry becomes most apparent. With the most advanced, productive technologies ever in existence production may be almost completely stopped. It is not in spite of, but precisely because of the efficiency of the productive apparatus that such is a likely possibility. The scarcity that made technological production profitable has provided the technological potential to eliminate the conditions of scarcity that the institutions of property and profit grew up on and to render it a chapter in a

history book. To avert such a situation it has been necessary to sabotage production and further to stimulate demands which provide a constant condition of synthetic scarcity. Such has been the historic role of the pecuniary classes. This is precisely the consequence Veblen anticipated and for which his phrase "conspicuous consumption" has become so famous. Consumption becomes the sphere of competition. The competition to be effective must be visible. If these conditions prevail the constant despoilation of materials, in much the manner of a potlatch, provides a forever renewed source of market potential.

The notion that the worth of all things is essentially quantifiable directly in proportion to their dollar value is confronted in The Higher Learning. Here Veblen is clearly staking out his area. This does not mean that this book represents a logical break from his other analysis. Quite the contrary. Veblen traces the same tensions between business and industry (and the variety of types of knowledge dealt with above) within the institution of universities. Idle

curiosity has its own bent, and requires no justification by reference to external criteria. It is an end in itself. Veblen also notes that historically the activity that is generated by this instinct has been regarded by the community as an end in itself. The imposition of alien criteria such as usefulness, a technical requirement, or profit, a business requirement, results in misdirection. Both sources relate to usefulness but the use is in service of different ends. Any attempt at assessing the worth of the higher learning by other than its own standards can only be viewed as misdirection. Regarding it as a means or using it in such a manner results from the fact that the institutional web of society binds the higher learning to the institution of business enterprise. So much is this the case that the latter must be transformed before the former. All else is "bootless meddling".

CONCLUSIONS

Many of the specific problems of explaining and interpreting Veblen's work have been examined. A brief review of how his emphasis on technology has been interpreted can be enjoined now.

Technological determinism is a term that is often used to describe Veblen's perspective. The exceptions, considered here, are the interpretations provided by Professors Parson, Friday and Dowd. Those who feel that technological determinism is an appropriate description are first considered individually as to the merit of their evidence, and then collectively as to the single argument of technological determinism.

Parsons pays some attention to the relationship between Veblen and Weber.[112] His comparison is concerned with the two divergent analyses of the sources of instability of the modern business economy. Veblen's position bases the instability on the dynamic relationship

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112. Max Weber, The Theory of Social and Economic Organization, T. Parsons (ed.), (Collier MacMillan Canada Ltd.: Toronto,, 1966), p. 40.

between machine process and business enterprise. This is, very roughly, the relationship between the technology of production and the organization of production, or between industry and business. Parsons credits that part of Veblen's analysis is accurate and that he does provide a counter-utopian image to the orthodox economics of "utopian optimism". After crediting Veblen with this much, Parsons goes on to say that,

> "Quite adequate comprehension of all Veblen's real contributions can be found in Weber's work - many of them he took for granted as too obvious to need demonstration. Weber, however, was able to understand the positive functional significance of the modern price system, more broadly the business economy, in a way which was quite inaccessible to Veblen....The conclusion seems inescapable that Veblen was a highly unsophisticated person who demonstrates the typical reaction of a disillusioned idealist in his scientific work."[113]

"The conclusion seems inescapable" that the main thrust of Parsons's criticism is that Veblen did not

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113. Ibid.

approach the modern business economy from the vantage point of functionalism. The criticism is unwarranted because of the fact that the things Veblen attacked most vigorously were the things that Parsons suggests he is lacking in.[114] Professor Parsons neglects the critical core of Veblen's work by ignoring the relationship between Veblen's perspective on technology. In doing this Parsons leaves the reader with the feeling that Veblen's attack on business enterprise is entirely without theoretical basis. Whatever else one may conclude from the above quotation there is one thing that is clear, either Parsons misunderstands, or has misrepresented, Veblen.

Carleton C. Qualey addresses himself to Veblen's

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114. See particularly,
"Why is Economics not an Evolutionary Science"
"The Preconceptions of Economic Science I"
"The Preconceptions of Economic Science II"
"The Preconceptions of Economic Science III" in The Place of Science in Modern Civilization, op. cit., pp. 56-180.

theory in a general way, and I think, makes an incorrect assessment.[115] He states, for example, that "This technological determinism of Veblen's is rather simplistic as compared with the 'technostructure' of John Kenneth Galbraith".[116] Nowhere does he define the meaning he ascribes to the term technological determinism, and nowhere does he explain the differences between Veblen and Galbraith, or why one explanation is simplistic and the other is not.

This assertion that Qualey does not understand Veblen's work is not specifically related to the problem of technology. It applies to his entire essay. For example, he states that Veblen would probably have been pleased with the way universities have overcome the problems discussed in The Higher Learning in America. Further, Qualey suggests that Veblen would have been pleased that through technology all classes now join in

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115. C. C. Qualey (ed.), Thorstein Veblen, op. cit.

116. Qualey, Ibid., p. 9.

the effort to constantly increase efficiency and expand the G.N.P.. Hopefully this thesis helps dispel such notions, which I can only regard as a gross and fundamental misinterpretation of Veblen (not to say current events). For better or worse all the present work has done is to focus on the problem of the role of technology in Veblen's work.

Reinhard Bendix makes a much more convincing argument.[117] "Its /technological determinism/ most consistent formulation is found in the work of Thorstein Veblen".[118] Bendix examines Veblen's propositions regarding the case of Imperial Germany. In doing this he contrasts Veblen's analysis with that of Marx. Specifically, he sees Veblen diverging from the Marxian proposition that non-industrial countries need only look to England to see what a capitalist industrial transformation will accomplish in their own

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117. R. Bendix, Nation Building and Citizenship, (John Wiley and Sons, Inc.: New York, 1964).

118. Ibid., p. 6, parenthesis mine.

country. Veblen, explains Bendix, dwells on these transitional periods where non-capitalist countries borrow an industrial technology. Bendix indicates that Veblen regarded these situations as "unstable cultural compounds" and that Marx too predicted their disappearance. The difference is apparently that Veblen tarried to analyse the characteristics of these transitional periods and Marx did not. Bendix concludes very convincingly,

> "But in the long run the "institutional consequences of a workaday habituation to any given state of the industrial arts will necessarily...be worked out". Thus, Veblen anticipates the transformation of habits of thought as an inevitable consequence of a people's adaptation to modern technology."[119]

The consistent emphasis in Imperial Germany is on process. However Veblen's notion that technology does have an independent "bent" does tend to counsel the the conclusion Bendix reaches. This is a problem of interpretation of an admittedly unclear aspect of

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119. Ibid., p. 7, emphasis in original.

Veblen's work. I have presented my analysis as it relates to Veblen's theory of knowledge. It does not coincide with Bendix's analysis. Technological determinism expresses a mechanistic conception that I do not find in Veblen's work.

Rosenberg wrote extensively on the problem of Veblen's approach to technology.[120] At a number of points his analysis is incisive, but on this question he is at many points unclear. He indicates, for example, that Veblen was clearly aware of the many factors that affect any given process in a causal way, but that by raising one factor to such a level of importance he ends up with "an untenable monocausal theory". His conclusion in this regard applies to both Marx and Veblen, because he posits the same weakness in both.

> "To a significant extent, Marx and Veblen are technological and/or economic determinists. In this matter there is some justification

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120. B. Rosenberg, The Values of Veblen, (Public Affairs Press: Washington D.C., 1956).

> for lumping them together as Sims does under the rubric of those who believe in "the automatic process" of social change."[121]

Later in the same book Professor Rosenberg accentuates the ambiguity of the "and/or" clause in the above quotation. When he is commenting on The Nature of Peace and the Terms of Its Perpetuation, he is distracted by Veblen's use of instincts in his explanation. Rosenberg's distraction is such that he comments, "That it /the use of instincts/ does violence to technological determinism is obvious."[122]

It does seem clear that the use of instincts in explanations would do violence to technological determinism, but the case that Veblen is a technological determinist is nowhere clearly made. In fact only two pages earlier in the same essay Rosenberg said,

> "Veblen's argument, whether valid or not, rests altogether upon his theories of social and economic stratification."[123]

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121. Ibid., p. 54, emphasis in original.

122. Ibid., p. 104, parenthesis mine.

123. Ibid., p. 102.

Professor Rosenberg could perhaps make the argument that Veblen's theories of social and economic stratification are based upon his technological determinism, in which case the seeming contradiction of his two statements is rendered consistent and the contradiction is written off to carelessness or misunderstanding. This resolution seems not to be tenable because nowhere throughout his work does he follow through, in analysis, a distinction between social and economic stratification and technological determinism. Where he does make a distinction its either not followed up or the distinction is made in the "and/or" manner cited above. What is neglected is a basic distinction. For Veblen technology is simply a "ways and means" of production. The ends to which that is put results from the interaction of technology with the social and economic structure.

Charles B. Friday makes quite a different case.[124.]

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124. C. B. Friday, "Veblen on the Future of American Capitalism," in C. C. Qualey, Thorstein Veblen, op. cit.

> "In Veblen's theory of economic development, technology plays such a crucial role that he has often been labelled a technological determinist. Although such is not quite the case, as we shall see later, technology does for him have an existence all its own."[125]

Although Professor Friday does make comments such as this, he occasionally lapses into mechanistically stated propositions. For example, "The changing technology has produced giant firms and world wide markets."[126] The argument being made is that the technology independently generates the organization and structure of production. However, his essay as a whole, does make the relevant distinctions between the component parts of the social and economic processes of society. By relevant distinctions all that is meant is that in explaining Veblen's economic theory Professor Friday makes the distinction Veblen viewed as relevant and further, he did carry these through to show how these distinctions have

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125. Ibid., p. 20.

126. Ibid., p. 22.

other theoretical consequences.

Professor Friday presents considerable evidence to substantiate his understanding of Veblen's work. His interpretation is that technological determinism is an inappropriate description. By demonstrating the importance of Veblen's theories of economics, Professor Friday shifts the emphasis from a non-institutional to an institutional focus. That is, he shifts the focus from technology to the institution of property, or from an emphasis on industrial to an emphasis on capitalist.

There remains to be examined one other writer who addresses himself to this problem. Given our original proposition that technology does play a critical role in Veblen's work, one would have thought that Professor Friday had removed that notion of determinism as far as possible from the arena of contention. This is not the case. Professor Dowd takes a somewhat different position.[127]

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127. D. Dowd, Thorstein Veblen, op. cit.

His view is that,

> "Veblen was not an economic determinist; he was insistent about the role of "non-economic" factors in affecting the rate and direction of social change."[128]

Social change is a crucial area of study in attempting to resolve the role of technology in Veblen's work. Dowd attempts an explanation of how Veblen accounts for social change. The argument he makes follows from his initial proposition that,

> "The process of change itself was for Veblen the result of continuous interaction between 1) the aims and methods of business enterprise and 2) the logic of industrial technology."[129]

The distinction Dowd is making seems very relevant. It involves not so much a change of direction, but rather a change of emphasis - a change in the way we ask questions about the same phenomena. Rather than asking what follows from a given mode of organization

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128. Ibid., p. 32.

129. Ibid., p. 32, emphasis mine.

or a given form of technology, we ask what will be the institutional consequences of the continued interaction of two components that considered together make up a process. Further, what are the divergent and/or reinforcing trends that operate in such a relationship? What factors affect the interaction of these components, and how will these factors affect the outcome?

The argument is not whether the economic organization or the technology is the most relevant or determinitive. What is relevant is the process of interaction of these things over time and as influenced by other factors. I think this focus is important to an adequate understanding of Veblen. Veblen also writes at length as to how it is precisely this approach to our subject matter that permits a distinction between pre- and post-Darwinian science.

Unfortunately, the critics of Veblen do not make clear the meaning of the term 'technological determinism'. The use of this label is critical to our interpretation

and as such it requires some elaboration. The lack of elaboration in the writings cited indicates what I take to be a pejorative, rather than analytic, use of the term. An alternate explanation for this lack would be that the meaning is so universally known that it requires no elaboration. I do not think that this is tenable. Further, an analytic use of term could not, without gross misrepresentation, be applied to Veblen's work. What the implication of these alternatives are to the writers reviewed involves a range of evaluation that I do not consider relevant in this context.

As I indicated in the introduction, 'technological determinism' in the most general form means an institutional subordination to the imperatives of technology. This paper has examined that proposition as it relates to Veblen's work. In general the label does not seem applicable to Veblen. However we can now assess the ways in which Veblen's work gives rise to such an interpretation.

One of the major emphasises and concerns of Veblen was the emphasis on process. This accords well with Professor Dowd's perception of how Veblen viewed social change. This emphasis can be seen in Veblen's characterization of pre- and post-Darwinian science. Pre-Darwinian science is characterized by its focus on a determinative cause and a determined effect. Post-Darwinian science is a science of process, focusing on the relationship of components that interact in a dynamic way and give rise to an effect. The effect is seen as part of the process, and hence it ceases to be considered as a finality. The effect also effects and remains part of the evolutionary process. Considering science in a pre-Darwinian manner meant that one would observe things and proceed to search for their cause. Once the causes and effects of all phenomena are categorized, the job is done. This relates directly to Veblen's comment that pre-Darwinian science is a science of taxonomy. One simply enumerates the causes and locates the effects. Post-Darwinian science does not contain the same degree of finality. For example,

technology generates forces, but the ends toward which these forces are directed and the outcome of the relationship of technology to other forces is a matter of process. The same technology, interacting with different institutional forces, will not necessarily (or of necessity) generate the same outcome.

It is not enough to note that Veblen saw a distinction between what can be called a 'classical' view of determinism and modern scientific work. It is possible to renounce something and yet engage in the same thing. Veblen, for example, continually renounces making any morally evaluative or prophetic statements. From my examination and from that of others, there is a disjunction between what he professed and what he practiced. We must therefore consider whether or not he used a "post-Darwinian formulation".

The approach of post-Darwinian science can be clearly seen in Veblen's analysis of Imperial Germany. For example, he contends that small states are contradictory to modern technology. The formation of a tariff union was not a technological response although

technology does influence the range of alternative available. Conquest of other dynastic states is another possible alternative that follows equally well. There is no technological prescription as to the setting up of protective tariffs for the internal development of business and industry. The Germanic response to expansion was to extend the boundaries of the state rather than, as in the British case, to maintain the territorial integrity of the state and enter into specific political and economic ties with its colonies. Veblen examines all of this in light of the relationship of the new technology to the old and evolving institutions of the dynastic states, the geographic and human resources, and the racial composition of Germany.

Veblen does not see Germany evolving British type institutions as a necessary consequence of this borrowing process. In fact he notes very early that the habits of mind, of duty and obligation, that derive from recent experience of dynasticism result in quite different relationships between employees and employers than

existed in Britain. His predictions concerning this "unstable cultural compound" called Imperial Germany clearly do not present an inevitable, technologically necessary outcome. A new technology injects a set of forces that to some extent modify or condition the range of alternatives that are feasible. If the forces injected are contadictory to the goals pursued then some resolution must be sought. This may be accomplished by an institutional change or an institutional supression of the forces of technology. In fact, Veblen is emphatic on the point that in the early stages of business, industry is advanced by the motivations of profit, but in the later stages, industry becomes potentially so productive that there must be an institutional suppression of industrial efficiency by businessmen in order to maintain profits. He referred to this later activity as sabotage which normally was no more than "business as usual".[130] It seems quite clear that referring to Veblen

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130. Max Weber notes Veblen's comments on the role of honesty in business. See Max Weber, The Protestant Ethic and the Spirit of Capitalism, T. Parsons (trans.), (Charles Scribner's Sons: New York, 1958), p. 151.

as a technological determinist is, at least in this case, a misappellation.

A major concern of this study, and I would argue the major focus of Veblen, is the distinction between business and industry. This theme runs throughout Veblen's writings from The Theory of the Leisure Class to Absentee Ownership. It is on the basis of the characteristics that Veblen attributes to machine process, that much of the fodder comes for the allegations that he is a technological determinist.

Veblen distinguishes between technology, with its various components, and business. Business is characterized by the goals toward which it is directed, including "investment for profit". The distribution of power in business organizations and in the larger society reflect these goals. He regarded investment for profit as antithetical to the working out of the forces of machine process. Business operates on profit, bargain, and vendability of product. The tension between what is vendable and what is serviceable characterizes modern society. Veblen identifies the interests of the "common man" with serviceability and the interests of the "vested

interests" with vendability. Serviceability is a technological factor, vendability an institutional one.

Within the business enterprise, technological decisions must rest with those who have the technological knowledge. This is generally the whole industrial class, but more critically the engineering and technical personnel. The decisions as to what to change and what not to change do not, however, rest with this class. These decisions rest with the representatives of the pecuniary class. The ownership and control of the enterprise by the pecuniary class means that they have the right to utilize the community's technological knowledge and to direct this knowledge toward institutional goals, that is the goals of business. As indicated above technological goals and institutional goals need not coincide. Indeed under the regime of investment for profit they do not coincide. The goals of business enterprise are seen as antithetical to the community's welfare which is bound up with the technology. Veblen is very clear on this. Business is simply the

recent historical expression of the more general institution of private property, which

> "...(grew) out of the self regarding bias of men in their oversight of the community's material interest."[131]

Although business operates in the manner outlined, technology still generates forces, which tends in quite a different direction. Technology, as indicated, affects the canons of verification of knowledge and it gives rise to habits of thought that contradict the habits of thought generated by business enterprise. The content of these habits need not be dealt with here as they have been presented in some detail in the body of this work. It is the interplay of these various forces that Veblen examines, and in that examination he does not posit a technological determinist position.

There is a sense in which Veblen wanted technology to be the determinative component of culture. This point comes out clearly in The Engineers and The Price System.

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131. T. Veblen, The Instinct of Workmanship, op. cit., footnote p. 24.

With the exception of this book, his wishes and his analysis do not coincide. Even in this book, as much of an intellectual aberration as it is, he does not argue from the standpoint of technological determinism. His presentation runs to the effect that if the forces of technology were given free play, the outcome would be of such and such a nature. He does not argue that the forces of technology will generate a specific type of institutional arrangement. This cannot be considered a technological determinist position precisely because he does not specify the institutional counterparts. If one were a technological determinist, or any other kind of determinist, that job could surely be at least passably accomplished. This book, The Engineers and The Price System, simply specifies the technologically efficient manner of carrying out a technological task - that is production. Within a consideration of the economy the tension between technological factors and the institution of private property is resolved because, as Veblen is careful to specify, property rights will be done away with. Other conflicts and tensions may arise, but

the one that haunts the house of Veblen is gone. This sort of conclusion seems characteristic of Veblen. He concludes The Theory of Business Enterprise on a similar sort of note. The conclusion is that there are two likely alternatives to the present instability. The institution of business enterprise will not survive either alternative. His conclusion runs in terms of the negative case. Two likely alternatives and the demise of the existing institutions does not sound like a determinist proposition. A technological determinist position on this case should be that if there is a progressive refinement of technology, there will be a similar move on the part of the institutions. This is the quantitative case. The case that Veblen makes is that there need not even be a qualitative change in the technology for there to be a qualitative change in the institutions.

In Veblen's analysis of the evolutionary growth of human society he most clearly does not make determinist arguments. In the transition from savagery to barbarism, the surplus generated from a productive technology permits

the growth of the institution of ownership. The form it takes results from many factors, some technological, others ecological, still others cultural. Later during barbarism two elements of culture, magic and religion, "...brought technological advance to a full stop".[132] Again this is patently not a technological determinist proposition.

At the close of the Dark Ages, and again after the Liberal Democratic revolutions, new productive forces were unleashed. In these cases Veblen notes the appearance of a new type of technology after the change in social institutions. In short he views these qualitative changes in institutions as removing the constraints of the old institutions. This permits and encourages the evolution of technology which generates forces back upon the new institutions. The new institutions must either change or restrictions must be placed on the technology.

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132. T. Veblen, The Instinct of Workmanship, op. cit., p. 81.

There is, however, a close connection between technology and institutions. Our canons of consumption grow out of the forces generated by business enterprise, as do habits of dress and a predatious foreign policy. These are reinforced by other elements of culture, such as religion and sports. Other forces generated by technology affect the canons of verification of science and many other "habits of mind" that run counter to the tendencies of business enterprise. Veblen is very critical of business and very uncritical of the effects that he sees following from industry. Virtually all that he values is characteristic of machine process - and is violated by business enterprise. There is, as stated, a close connection between the two and,

> "...there has grown out of this new industrial regime itself, in part by direct consequence of its technological character and <u>in greater part</u> by way of use and want conditioned by the industrial efficiency of the new regime, a broad fringe of usages, conventions, vested rights, canons of equity and propriety, <u>that are no part of the new state of the industrial arts</u>,

> but that are often all not easily separated from it or from its usufruct by the community whose work it is."[133]

Veblen's conclusions were not universally accepted in his day or this. I indicated in the introduction to this paper that the questions which Veblen addressed himself to were at least as old as the discipline of sociology. We have today a number of well known authorities who are still providing answers to these questions. Since they have read Veblen, one must assume that they did not find his answers satisfactory, even though they indicate some indebtedness to Veblen's work. We can now briefly examine how their answers compare to those provided by Veblen and thereby establish the relevance of Veblen for today.

The major theorist chosen for the comparison is J. K. Galbraith.[134] Galbraith's argument is sufficiently

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133. T. Veblen, Imperial Germany, op. cit., p. 121, emphasis mine.

134. J. K. Galbraith, The New Industrial State, (Houghton Mifflin Company: Boston, 1967).

notorious that the outlines of it ought to be adequate to make the relevant points. Galbraith divides the economy into two parts. These are the smaller firms that to a greater or lesser extent depend upon the "market", and the mature corporations that control sources of supply, control demand, and by planning are independent of the market. This latter part of the economy is dominant and Galbraith refers to it as the Industrial System. He goes on to explain how this form of organization has brought itself into line with the requirements of advanced technology. Largeness of scale, organized intelligence, and planning work together not only for profit but also in the service of industrial ends.

> "The imperatives of technology and organization, not the images of ideology, are what determine the shape of economic society."[135]

Capital becomes abundant as a result of this tremendous industrial efficiency. Hence it loses its characteristic

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135. Ibid., p. 7.

of scarcity, and is replaced by organized intelligence. He refers to this component as the technostructure. This is structurally located below the managers and above the work force. Here is where decisions now rest. Galbraith is explicit about owners not controlling the enterprise, that function resides with the managers. However, the power of the managers, at least in the mature corporation, has been usurped by the technostructure. The technostructure operates as a committee, or group system, whereby specialized knowledge is pooled, tested, examined, and decisions are reached. Galbraith indicates that often groups must combine information and suggestions so that the suggestions of one group may be dependent upon the researches and decisions of another group. He further argues that the managers cannot really override the decisions of the technostructure because those decisions were made on the basis of specialized knowledge. If management does so, the result is almost universally disastrous. In terms of decision making everything outside the technostructure is considered by

Galbraith to be "external". These external influences include the state, the stockholders and the managers.

The goals of the technostructure have changed. Profit maximization is no longer the only goal. Growth and autonomy are also very important considerations of the technostructure.

The mature corporation becomes progressively enmeshed with the state. The state underwrites research and development, ensures a market, and eventually the distinction between the state and the corporation virtually disappears.

Finally, Galbraith makes an argument concerning the convergence of industrial societies. Near the beginning of Galbraith's book, convergence is left as planning and organization, but later he is more affirmative as to the range of convergence.

> "Thus convergence between the two ostensibly different industrial systems occurs at all fundamental points."[136]

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136. Ibid., p. 391.

This removes ideological differences from the arena of consideration. Volition about what happens once once reaches a high level of industrialization is not great, and once decisions are made,

> "Thereafter the imperatives of organization, technology, and planning operate similarly, and we have seen to a broadly similar result, on all societies. Given the decision to have modern industry, much of what happens is inevitable and the same."[137]

Convergence is only a recent phenomena. Galbraith very wisely does not argue that like technologies generate like social structures. He is emphatic on the fact that this convergence is a recent historical phenomena that is integrally related to the imperative of the newer large scale technology.

Professor Kerr, et al makes essentially the same argument with minor variations on theme.[138] Convergence

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137. Ibid., p. 396.

138. C. Kerr, et. al., Industrialism and Industrial Man, (Oxford University Press: New York, 1964).

occurs. A differentiation of skills required by the logic of industrialization is met by a stratification of the work force in terms of power. More mobility, decline of ascribed status, pluralistic politics, and a growing consensus are also characteristic features of this same logic. In general, the similarities between Kerr et. al., and Galbraith are substantive over a wide area. Their perspectives are not uncommon, or unpopular today. Both theorists differ in some important ways from Veblen.

The most persistent difference between these theorists and Veblen is the conscientiousness which Veblen displays in continually making clear the difference between a technologically generated force, and the particular institutional manner in which it is expressed or repressed. Galbraith does not regard the distinction between production for profit and production for use as relevant or fundamental. He states, for example, that the difference between the Soviet and American systems resides in a difference of method. Galbraith concedes

a greater efficiency of the Industrial System, but does not emphasize that it is precisely this efficiency that generates many problems. Efficiency of production means that production must be sabotaged to maintain a profitable price. Clearly the industrial system can remain very much the same when the business system suffers drastically. However, the industrial apparatus may lay idle in the face of a dramatic need for the products. Precisely this situation was evident during the Great Depression. There were no industrial reasons for those conditions. The reasons were reasons of the business requisites - of profit. This contradiction between what is serviceable and what is profitable is not resolved by Galbraith.

Veblen also noted that an increasing proportion of the costs of products is taken up in merchandising. Galbraith also recognizes this in his constant references to the "untutored responses" of consumers. The spending on this area is referred to by Galbraith as required by the industrial necessity of planning. Veblen sees the same process as being the result of the business strategy

that requires the tutoring of consumers in order to make a product merchandizeable. If a product is serviceable, the tutoring is quite unnecessary. In a sense this point of difference is also a point of similarity. It is the case that there is planning, but the goals toward which this is directed differs, and therefore the results are different. Veblen recognized that business strategy is not coterminous with the community's general welfare. Galbraith notes a similar point, however, the solutions to the dilemma differ. For Veblen the solution resides in the abolition of property rights, the structural source of the dilemma. For Galbraith the institutional component have adjusted to the demands of technology and therefore the change Veblen suggests need not occur. Veblen feels that the reconciliation of these forces is impossible without a change in our institutions. To some extent Galbraith also agrees and he addresses himself to the problem of the relations of power. On this problem Veblen and Galbraith most clearly diverge, and it is to

this area that we now turn our attention.

Veblen argued the likelihood of a progressive withdrawal of businessmen from the operation of industrial concerns. He noted that in his day the process had already begun. More and more businessmen were hiring industrial experts to run the affairs of the plant. He attributed this, in part, to the progressive incompetence of businessmen in industrial matters, and in part because of the tendency of business to become finance.

Fewer businessmen have their fortune tied to the successful operation of a given plant. This is in part due to the tendency to combination or monopoly. Important in this problem of the withdrawal and incompetence of businessmen is the divergence of the types of knowledge. The knowledge of business strategy, and technologically serviceability knowledge becomes ever widening. In all this Veblen does not note a change in power relations such as would be suggested by terms such as a 'managerial revolution', or as Galbraith suggest, control by a technostructure. There is no necessary connection between

competence and control.

Veblen notes throughout his historical studies that it is ownership of the material equipment of production that allows the ownership to turn the community's knowledge and material resources to account for whatever purposes are deemed consistent with the "divine malevolence". Galbraith notes the same, but argues that in the present case this generalization becomes untenable. The reason Galbraith provides is the great complexity of knowledge required by modern technology. One can not help reflecting on the technological knowledge possessed by the master craftsman, and the control of the master craftsmen by mercantile interests.

Galbraith's argument runs, I think, quite along the lines of technological determinism. There has been a fundamental shift in social institutions due to the imperatives of technology. Due to the complexity of technological knowledge, and its scarcity, power has shifted to those who possess it. There is a convergence in "all fundamental areas" of countries that have an

advanced industrial technology.

Galbraith's discussion of contemporary America is very similar in many ways to Veblen's analysis of Imperial Germany - with a difference. The tariff union was formed in part as a result of the forces of technology which make large scale operations more technologically rational. This new technology - the ways and means, did not alter the institutional goals. Technology does not prescribe goals other than the efficient and serviceable production of goods. This does not exclude the possibility of a specific technology being antithetical to the achievement of some goals however. This is the point of divergence between Veblen and Galbraith. Veblen still viewed the goals of imperial and dynastic institutions as being incompatable with the altered technology. Galbraith finds that the institution of capitalism in North America has made an adjustment to the ways and means counselled by the technology but does not regard the goals toward which this is directed as being contradictary. Kerr is even more blatant than Galbraith. Kerr regards all nations as seeking industrialism,

essentially to become like the U.S.. The various ideologies and developmental paths chosen are almost written off as excuses for seeking the good life.[139]

Galbraith predicts that within five years of his writing, by 1971, we will have someone landed on the moon. He indicates that this, like the problem of environmental pollution, is a technological problem. Even though we do not now know the solutions, we do know that answers will be found. It is interesting that he predicts the solution of one of these problems prior to the other. The answer lies not in our technologies, but in our institutions. And this, the goals towards which our technology is directed, is an area of analysis that convergence theorists ignore. Veblen did not! From plow-shares to swords is the same problem as a change from production for service to production for plunder. Neither change is accountable for in terms of the technology.

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139. Ibid., see especially Chapter 2.

SOME FURTHER PROBLEMS

Technology does play an enormous role in Veblen's work. From this, however, it does not follow that Veblen is a technological determinist. In fact such a conception neglects the emphasis that Veblen placed on the dynamic relationship of elements of culture. The roles of knowledge, man, and conspicuous consumption are all related to this process. Veblen recognized social behaviour, (an example is the consumption of material goods in conspicuous ways), as both affected by and affecting the probable outcome of such a relationship. There are, however, problems with Veblen's conception of technology.

Veblen is totally uncritical ofmachine process and the effects it produces. He most clearly sees the beneficent nature of modern technology, if it is permitted to work itself out according to its native bent. The nature of man and the nature of machine process are congruent. Finally, one must recognize that Veblen did have a conception of a "best fit" between institutions

and technology.

Man's nature and machine process are progressive forces in their current milieu. Institutions are conservative. Science as a corollary of machine process is also progressive. With Veblen's notion of cultural lag we would expect the institutional aspects of culture to be brought into line with these more progressive material forces. However, Veblen does not give us that assurance. In fact, there is the likely possibility that the demise of the pecuniary stage of barbarian culture will lapse into the barbarism that accompanied the conclusion of the predatory stage. That is to say that his predictions are as pessimistic as the opportunities are optimistic.

His approach is often repetitive and convoluted. He locates the relationship that he feels is most relevant to explanations of man and then ties in other elements of culture. There is an examination of the divergent strains generated by components of this relationship, and how these strains act and react to other components and each other. This approach tends to

produce much of the repetitiveness of his work, which is then compounded by the use of very peculiar grammatic and syntatic structures. To this one must add the problem of an archaic vocabulary and a distinctive sense of irony.

One of the major gaps in Veblen's work is the ideology of the engineers. He explains, at great length, why the engineers should be most inclined to reject the institution of private property, but notes that they have a "hired man's loyalty". This is ambiguous in the sense that one cannot tell whether that means that the engineers do not consciously consider property as being any other way than it is now or whether they implicitly reject it and their loyalty to it is 'hired'. Veblen provides no thorough analysis of this, but some explanation can be found in his other works. He notes that the reign of machine process has been short and therefore the full effects of habituation to it should not be expected. At other points he is most clear that the current cultural scheme contains contradictary strains which means that the impact of one element of

culture may neutralize the impact of another. Unfortunately Veblen provides us with no way of ascertaining which will have the greatest impact under what conditions.

This relates directly to another problem that Veblen does not resolve satisfactorily. He states that,

> "...the habit of mind induced by addiction to modern methods of industry should favour an individualistic bias in civil relations and an impatience with authoritative government."[140]

However, as noted earlier, Veblen comments that "socialistic disaffection is loosely bound up with the machine industry". From his review of the characteristics of machine process it is easy to see why it should support egalitarian sentiments and mitigate against authoritarian relations. The problem is that he was vehement in his attacks on the individualism that found its justification in natural rights philosophy. The only resolution is

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140. T. Veblen, Imperial Germany, op. cit., p. 134.

that he still viewed individualism as desirable, but under different philosophical and institutional auspices. This means that the ideals of individualism cannot possibly be met given the institution of private property, but the goals of individualism are fine. All of this goes beyond what Veblen said.

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