

The self-referential problem in Veblen's epistemological theory and his ontological basis

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Introduction

Veblen's theory of knowledge has an inconsistency that we refer to as the self-referential problem, echoing Samuel's (1990) paper. The theoretical tools of Veblen's theory of knowledge cannot be fully applied to his own theory and to the scientific paradigm to which it belongs. He tries to escape from the social and institutional conditioning on knowledge by using material determinism. We argue that this inconsistency brings about methodological problems if we are to take his concept of science literally.

On Veblen's concept of science

Veblen (1919a) identifies as scientific the knowledge built during the modern era; and such scientific knowledge can be classified into pre-modern and modern (or still darwinian or evolutionary). He extends that distinction to the economic theories, being that the Classical Political Economy and the Neoclassical Economics are examples of the first type and the Institutional School belongs to the second one¹. For Veblen, science is not a single thing, which would be always guided by the same validation criteria and the same interpretation basis.

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¹ For the sake of argument, we will use the pre-modern/modern taxonomy to refer to each scientific methodology in a non-specified way, including the economic science.

In the pre-modern paradigm, scientists seek to define the final term to which the sequence of phenomena would tend to reach, as well as its beginning. Both states are conceived in a speculative way, since the scientist cannot know exactly when each of these events happen in the sequence of phenomena observed. For Veblen (1998, p. 405), the content of these states are purely based on metaphysical beliefs, in “spiritual facts”. The relevant questions to the pre-modern scientist are:

...[H]ow things had been in the presumed primordial stable equilibrium out of which they, putatively, had come, and how they should be in the definite state of settlement into which things were to fall as the outcome of the play of forces which intervened between this primordial and the definite stable equilibrium. (VEBLEN, 1919b, p. 37)

The two states, the primordial and the definite, as well as the causal relation that connects both are immutable regarding the natural law the scientists have formulated (VEBLEN, 1919b, p. 37). Natural laws are rules which govern the observed phenomenal uniformities and impose a moral discipline to facts (VEBLEN 1919b, p. 52). That is because the natural state to what things would tend to is not only considered true, but right and good, and the laws are defined by such state. Such preconceptions interfere in all investigation process, making the observations and causal sequence square to its characteristics (VEBLEN, 1998 [1898]). Hence, science has teleological features. In conclusion, the hypothetical natural state to which facts would tend to has primacy over observed phenomena. These are the ones that should be adequate to those.

When facts and events have been reduced to these terms of fundamental truth and have been made to square with the requirements of definitive normality, the investigator rests content. Any causal sequence which is apprehended to traverse the imputed propensity in events is a ‘disturbing factor’. (...) The objective point of the efforts of the scientists working under the guidance of this classical tradition is to formulate knowledge in terms of absolute truth; and this absolute truth is a spiritual fact. It means a coincidence of facts with the deliverances of an enlightened and deliberate common sense. (VEBLEN, 1998 [1898], p. 405)

The main purpose of the scientific work is taxonomy, *i.e.* to define and classify the phenomena (VEBLEN, 1919b, p. 36). The classification criteria and the definition are too conceived by the scientist from an idealized “natural order”. His work is to reveal the general

and immutable principles of this order that, for the pre-modern scientist, are revealed to him by the observation of phenomena, independently of the social context or cognition processes.

The modern scientific knowledge, in its turn, is the one which deals impersonal and dispassionately with material facts (VEBLEN, 1919a, p. 1). Darwin is recognized as the science revolutionary (VEBLEN, 1919b). “For Veblen, what is particular about Darwinian evolutionary biology is the lack of any overall intent, purpose, or design: the evolutionary process is 'blind' and driven by the purely causal processes of variation and natural selection” (RUTHERFORD, 1998, p. 465). With no determined end to reach, the sequence of phenomena is taken as non-intentional and non-teleological.

The science that was developed after the Darwinian revolution has focused in the causation process, which is the same as the instable interval between cause and effect, instead of the equilibrium states (VEBLEN, 1919b, p. 37). Scientific inquiry is centered in the processes of change and what gives nexus to the sequence of changes is the cause-effect relation (VEBLEN, 1919b, p. 32). Modern science “...constructs the life-history of a process in which the distinction between cause and effect need scarcely to be observed in an itemized and specific way, but in which the run of causation unfolds itself in an unbroken sequence of cumulative change” (VEBLEN, 1919b, p. 38). Each effect of certain change is only the point of departure to future changes.

The modern scientist is unwilling to depart from the test of causal relation or quantitative sequence. When he asks the question, Why? he insists on an answer in terms of cause and effect. He wants to reduce his solution of all problems to terms of the conservation of energy or the persistence of quantity. This is his last recourse. And this last recourse has in our time been made available for the handling of schemes of development and theories of a comprehensive process by the notion of a cumulative causation. (VEBLEN, 1998 [1898], p. 405)

Consecutive change is a postulate to modern science (VEBLEN, 1919b). Because of this very nature, science in the modern sense can never reach a final conclusion: each result is only the beginning of further research. The final term, to which the phenomena would tend to, does not matter anymore and causality is always changing in a cumulative way (VEBLEN, 1919b). Any teleology conceived to the sequence of events means imputation of subjectivity and goes the other way of the consecutive change postulate.

The scientist does not worry about conceiving the “natural state” of things, so he can concentrate in the causal relation of the phenomena going on. In this way, the causal sequence

does not need to be constructed to reach certain preconceived outcome. Veblen concludes that the ideals of the pre-evolutionary science come first to the objects of inquiry themselves; while in the evolutionary science causality is learned by the processes of events in study (VEBLEN, 1998 [1898]).

The major characteristics of 'modern science', according to Veblen, are that it is evolutionary; that it is 'unwilling to depart from the test of causal relation'; that it runs strictly in terms of a 'colorless impersonal sequence of cause and effect' (Veblen 1898B, pp. 60-1); that it is theoretical and not merely descriptive or consisting only of a 'narrative account of industrial development' (Veblen 1898B, p. 58); and that the development of a proper evolutionary theory is possible owing to the cumulative nature of the cause and effect sequence (RUTHERFORD, 1998, p. 463).

To ground this distinction of methodologies, Veblen states one hypothesis over the human cognition process. According to him, there are two kinds of thought available for human beings: the pragmatic thought and idle curiosity.

The pragmatic intelligence is intentional and directed to a specific aim (VEBLEN, 1919a, p. 5). The pragmatic knowledge is only considered valid when it is somehow convenient to the individual. Besides this kind of knowledge, Veblen states that human beings have an idle curiosity as well, which is uninterested and only seeks to induce the causal relations between observed phenomena (VEBLEN, 1919a). Contrary to the pragmatic knowledge, idle curiosity does not establish by itself value systems to judge the results of its thoughts. So, any thought guided by idle curiosity could be considered valid, needing not to be expedient or to attain some purpose to the one who thought it. Its canon – if we could say so – is pure curiosity. For now, it is only needed to keep in mind the relations of pragmatic knowledge with pre-modern science and of idle curiosity with modern science. We will recapitulate these relations further on.

Intentionality in human action as well as non-intentionality are considered biological traits developed by the evolution of the species², i.e. by events and forces that seek no end in themselves (VEBLEN, 1919a). Hence, both are only possible offspring of evolution, not a necessary trait of human beings. Summing up, the difference of the two kinds of cognition,

² Darwin explained the diversity of species by the mechanisms of variation of characteristics, heredity and natural selection. The competition for natural resources necessary to survival (which does not augment in the same proportion to the reproduction of individuals – there is a declared influence of Thomas Malthus) selects the best fit to the environment. These are the ones who will reproduce more and pass through their characteristics. This causality type is not teleological, because the environment itself can also change, and there is no a priori trait that would lead to a better adaptation to the natural conditions (MEYER e EL-HANI, 2005).

pragmatism and idle curiosity, is: “(...) idle curiosity formulates its response to stimulus, not in terms of an expedient line of conduct, nor even necessarily in a chain of motor activity, but in terms of the sequence of activities going on in the observed phenomena” (VEBLEN, 1919a, p. 7).

The theory of changes in the habits of thought

To Veblen, knowledge structures itself differently through time. The changes in the knowledge systems are due to the changes in the habits of thought (VEBLEN, 1919b). These are formed by a wide spectrum of influences, “by the more impressive affairs of life, by the institutional structure under which the community live” (VEBLEN, 1919a, p. 10). Veblen (1919b, p. 39) says that what affects human behaviour in some activity must influence others somehow. Therefore, the cultural scheme – the way people are habituated to conduct their lives that comes from the interaction with material circumstances and institutional context – directs the intellectual search of the people in such community. Habits of thought are a consequence of the habits of life (VEBLEN, 1919b, p. 38), which are formed by life circumstances and the experiences each individual has in a given institutional and material context. Individuals are impinged to act and think on those manners and the consensus over these habits brings about common patterns of action and thought to a given community. The consensus is reached by the coherent life experiences of the social actors (*ibid*). A certain habit of thought can only be maintained if the habits of life support that point of view (VEBLEN, 1919b, p. 39).

Like the life circumstances, habits and institutions change, so does the forms of thinking. “[S]cience and the scientific point of view will vary characteristically in response to those variations in the prevalent habits of thought which constitute the sequence of cultural development” (VEBLEN, 1919b, p. 38). This change, however, is not chaotic, as habits are temporal and spatially continuous³. The length of their duration depends on their adequacy to the life experiences of the individuals in a community.

³ Here, we briefly explain some concepts (instincts, habits and institutions) that are useful for the Institutional Economics. To Veblen (RUTHERFORD, 1998, p. 465), instincts determine the objectives of action, but not how to make it. They are biological and hereditary traits, whose evolution is not, though, alien to material and institutional context (*ibid*). Mutations are rare, and natural selection – in account of the struggle to survive in a

Institutions that permeate through the social fabric force their rules and canons to theories (VEBLEN, 1919a, p. 10 e 11): “(...) men learn to think in these terms as ultimate and definitive” (ibid); “[w]hatever is to be explained must be reduced to this notation and explained in these terms; otherwise the inquiry does not come to rest” (VEBLEN, 1919b, p. 51). According to the preconceptions of institutions, knowledge – on speculative grounds – can be considered valid or not, structuring a theory validation criterion. So, to Veblen, the scope of knowledge and what is considered true vary accordingly to the institutional context.

Veblen argued that at the deepest structural level mankind pursues its intellectual efforts along paths of certain habits of thought, systems of preconceptions or prepossessions. These habitualized preconceptions, unrecognized and unchallenged as they are, derive from the practices of ordinary life and the institutional arrangements within which people live. (SAMUELS, 1993, p. 76 e 77)

Veblen (1919b) has also emphasized how important is the evolution of material conditions to compose institutions and, therefore, to structure theory validation rules. To the author, regardless of the cultural scheme in vigor, there is always the kind knowledge that comes from the experiences with brute facts, like the direction of a stream flowing down the hill and the capacity of a knife to cut softer materials (1919b, p. 41 e 42). About this sort of knowledge, Veblen states that “There is no range of knowledge that is held more securely by any people than such matters of fact; and these are generalizations from experience; they are theoretical knowledge, and they are a matter of course” (1919b, p. 41 e 42). Factuality limits it and so the scope of imputation of subjectivity, by interpretation or adequacy to alien principles, is little, unlike the knowledge of more abstract things:

Speculative knowledge, on the other hand, generally deals with cosmologies and complex phenomena. It can be not directly guided by matter-of-factness; institutions and its canons of theory validation intervene between reality and knowledge (VEBLEN, 1919b, p. 44). Institutions are more flexible than material reality (*ibid*), because they are a product of human

environment of scarcity – give the instincts the power to last through time (RUTHERFORD, 1998). Stability in Veblen’s conceived system is due partially to instincts. While instincts are responsible for the motives of human action, exactly how they behave cannot be defined *a priori*. To Veblen, behaviour emerges from sequences of actions taken previously and from the interaction with the environment, and so they become habits (CAVALIERI, 2009). Veblen (*apud* HODGSON, 1998b, p. 179) defined institutions as “settled habits of thought common to the generality of men.” Contrary to habits, institutions impose, in a community, shapes and limits to the large variety of possible activities human beings can develop (HAMILTON, 1932).

understanding: “[institutions are] a matter of law and custom, politics and religion, taste and morals, on all of which matters men have opinions and convictions, and on which all men ‘have a right to their own opinions’.” (*ibid*). Being more flexible, institutions can delimitate more widely the margins of what is true from what is not.

It is on the higher levels of speculative generalisation that the impressive mutations in the development of thought have taken place, and that the shifting of points of view and the clashing of convictions have drawn men into controversy and analysis of their ideas and have given rise to schools of thought. The matter-of-fact generalizations have met with relatively few adventures and have afforded little scope for intellectual initiative and profoundly picturesque speculation. On the higher levels speculation is freer, the creative spirit has some scope, because its excursions are not so immediately and harshly checked by material facts. (VEBLEN, 1919a, p. 43)

Anyhow, the space for institutional development is too limited, but by life circumstances of society (VEBLEN, 1919b). So, if a social class has no direct contact with the universe of work and the material facts, the life circumstances of the individuals belonging to that class would not encompass experiences with matter-of-fact realities and therefore their habits of thought would not need to be consistent with such material reality. The scope of the speculative knowledge would not be therefore directly limited by matter-of-factness. Social stratification makes possible the discrepancy of the institutionalized habits of thought and the life circumstances of part of the society (VEBLEN, 1919b). To Veblen (1919b, p. 46), the disconnection of the elite from the universe of work and material facts allows this divergence of the speculative knowledge held by upper-class people and matter-of-factness. The complex social-institutional fabric can be structured to correspond to matter-of-fact reality or not.

Under such a bifurcate scheme of culture, with its concomitant two-cleft systematisation of knowledge, **“reality” is likely to be widely dissociated from fact** – that is to say, the realities and verities which are accepted as authentic and convincing on the plane of speculative generalisation... (VEBLEN, 1919b, p. 45 e 46, emphasis added)

Veblen (1919a) highlighted to the main institutions that, at the same time, defined and held the habits of thought throughout Western history. He covered in a general way the whole History, as Cavalieri and Lima have described: “There are four stages in the history of human society (...): the peaceful savageness, barbarism, the era of handicraft and the machine

era” (2011, p. 11)⁴. Each institutional structure instills the correlate habit of thought that reveals the specific point of view of that society and how it interprets the phenomena. We relate the two last stages of human History to the two kinds of science described by Veblen: the era of handcraft to pre-modern science and the machine era to modern science; and we here focus on these two last stages and leave the others behind. The classifications are not rigorous in the sense that with the appearance of the machines, the institutions and scientific point of view would automatically change. Science made in the first decades of the nineteenth century would still be guided by the era of handcraft preconceptions, even though machines were already used in the production of goods (VEBLEN, 1919b, p. 53).

With the coming of modern times and industry, in the late seventeenth century, there is a change in the economic organization of society and an analogous change in the nature of theoretical inquiry (1919a, p. 12). The values of tradition and authority of the Church and the old philosophers have lost their place to the emerging science and practical knowledge (*ibid*). Workmanship, in the sense of the achievement of some end of the craftsman⁵, was a central concept to the industrial culture, and likewise the representation of the worker became to science – “so the concepts of the scientists came to be drawn in the image of the workman” (VEBLEN, 1919a, p. 13). The events observed in manufactories and workshops are products of the work of the craftsman and this model was extended to the rest of phenomena explanation. The causal nexus between facts was true if coherent to the craftsman material achievements in work.

In the era of handcraft, the interpretation of phenomena imputes anthropomorphic character to science (VEBLEN, 1919a, p. 13). The observed facts and objects act as if they were pursuing a given end, in an analogy to the human behaviour. This amounts to saying that intentionality and purpose are attributed to facts.

The causes of an event are conceived in resemblance to the work of the craftsman: “*Like causes produce like effects*” (VEBLEN, 1919a, p. 14).

Workmanship gradually supplanted differential dignity as the authoritative canon of scientific truth, even on the higher levels of speculation and research. This, of course, amounts to saying in

⁴ Own translation, original in Portuguese.

⁵ On the concept of workmanship, see CRUZ (2007).

other words that the law of cause and effect was given the first place, as contrasted with dialectical consistency and authentic tradition. (VEBLEN, 1919a, p. 14)

In the more recent period the machine took the place of the worker as the symbol of causality to science (VEBLEN, 1919a, p. 16). Besides technology, which is the practical application of the scientific knowledge, not being a purpose of the scientist, who would work guided by his idle curiosity only, it has become the validation principle of theories in the modern era. It has become useful to describe the causality going on in the automatic processes of production. Only the theories consistent with workable technology and material/objective reality are considered valid, because facts are taken as brute and inanimate, with no intentionality whatsoever, just like the operation of a machine. In conclusion, theoretical speculation is only accepted, according to the modern social-institutional context and habit of thought, if it takes the machine archetype as the analogy of true reality:

Science and technology play into one another's hands. The processes of nature with which science deals and which technology turns to account, the sequence of changes in the external world, animate and inanimate, run in terms of brute causation, as do the theories of science. These processes take no thought of human expediency or in expediency. To make use of them they must be taken as they are, opaque and unsympathetic. Technology, therefore, has come to proceed on an interpretation of these phenomena in mechanical terms, not in terms of imputed personality nor even of workmanship. Modern science, deriving its concepts from the same source, carries on its inquiries and states its conclusions in terms of the same objective character as those employed by the mechanical engineer. (VEBLEN, 1919a, p. 17)

Technological progress and the spread of the industrial civilization have printed a stronger character of impersonality and objectivity to scientific inquiry and the explanation of the sequence of phenomena has been described less and less in an anthropomorphic manner (VEBLEN, 1919a). The gap between matter-of-fact and the speculative knowledge becomes narrower as the modern scientific paradigm takes shape. The institutional context in this case has drawn human beings closer to the universe of work and matter-of-fact reality.

... [S]cience in that modern sense of the term (...) implies **a close contact, if not a coincidence, of reality with fact.** (...) if the institutional fabric, the community's scheme of life, changes in such a manner as to throw the work-day experience into the foreground of attention and to center the habitual interest of the people on the immediate material relations of men to the brute actualities, then the interval between the speculative realm of knowledge, on the one hand, and the work-day generalizations of fact, on the other hand, is likely to lessen, and the two ranges of knowledge are likely to converge more or less effectually upon a common ground. When the growth of culture falls into such lines, these two methods and norms of theoretical formulation may presently come

to further and fortify one another, and something in the way of science has at least a chance to arise. (VEBLEN, 1919b, p. 46, emphasis added)

The materialist determination of the theoretical system

In Veblen's theory, the changes in the form of structuring knowledge are due to the cumulative transformation in the society's habits of thought (VEBLEN, 1919b). Particularly to his view, the changes happen as required by the methodological proposal of modern science: the phenomena are, in a way, impersonal and seek no defined end; conversely, they are continuously changing in an evolutionary way. This statement is owed to the fact that habits of thought are a consequence of the habits of life, which are limited to matter-of-factness in typical social conditions of close contact of the population – and the scientists – with the universe of work and material reality. Facts are taken as brute and in continuous transformation, and this assumption gives the non teleological feature to theories. Veblen's theory of change in the habits of thought is, thus, within the paradigm of modern science.

For the habits of thought, the changes in the technology and in the material reality impose themselves more intensively than the changes in the institutional structure, as the former is able to determine the latter. Mirowski (1988) defends a material determinism over institutional evolution, in Veblen's system. To him, the author

... wished to argue that there was a certain inevitability to the whole process: the matter-of-fact efficiency characteristic of the technician would necessarily clash with the anachronistic appeal to inefficiency propped up by the legitimation of natural law by the "captains of industry"; and Veblen intimated that the technicians would defeat the business interests in the long haul. (MIROWSKI, 1988, p. 124)

Institutional variation being an adaptive answer to the transforming material conditions, as suggested by Rutherford (1998), can allude to the dependency of institutions in Veblen's theory. Institutions are not able to transform themselves; they are subjected by the technological progress:

At base, his theory was one of new technology changing economic conditions, and new economic conditions leading to new ways of thinking and to new institutions through a (nonintentional) process of 'habituation'. (...) Veblen's system is not so much one of institutional variation followed

by selection by the material environment as it is one of variation in the material environment itself promoting an adaptive institutional response (RUTHERFORD, 1998, p. 463-465).

Actually, it is only possible to maintain a habit of thought inconsistent to matter-of-factness if the institutional structure prevent the speculative inquiry from being in touch with material reality; conversely, the habits of life of the ones who deal with such knowledge would not sustain such habits of thought. On the other hand, the habits of life of the people who deal with working processes and material facts inevitably stop them from adopting speculative habits of thought, because their life circumstances would be contradicting to such statements. The social class division, thus, induces ideological separation. However, as a part of society will always have to work, in order to guarantee the reproduction of the necessary material goods, the matter-of-fact knowledge will always be important. Its preponderance in the knowledge scheme of society is a matter of the changing emphasis of institutions.

Samuels (1993) argues, nonetheless, that the technological factor was not determining but only conditioning to the institutional dynamic, and human action could affect reality:

Preconceptions are the product of both the state of the industrial arts, and the habitualized practices to which they give rise, and the institutional structure under which the community lives, but the "state of the industrial arts is dependent on the traits of human nature, physical, intellectual, and spiritual, and on the character of the material environment." Change in the preconceptions "is closely correlated with an analogous change in institutions and habits of life, particularly with the changes which the modern era brings in industry and in the economic organization of society." (...) There is a strong technological determinism here, but, because it must be comprehended in terms of a much larger model, perhaps better expressed as conditionism: "...under the Darwinian norm the question of whether and how far material exigencies control human conduct and cultural growth becomes a question of the share which these material exigencies have in shaping men's habits of thought." (SAMUELS, 1993, p. 78 e 79)

The reality, even though partially built by humans, is qualitatively different from the latter: matter-of-factness is not questioned on the whole, while the theories that are a product of subjective deliverance are. Besides, the material reality is able to transform itself independently from the individuals' actions and knowledge; the contrary not being true, as the changes in the habits of thought are only valid if consistent to the material reality. Even if Veblen affirmed human action as a transforming force of nature and, thus, of the matter-of-fact knowledge (that would be a function of a reality materially built by the individuals), the ultimate validation criterion would still be the consistency to the external world. The independence of external reality and the dependence of human knowledge and institutions from that reality are not discharged, even considering Samuels' argument.

The role of metaphysics

The ultimate basis of knowledge is the material reality, in Veblen's theory. The certainty of matter-of-fact knowledge is held to such degree that all theoretical formulation would derive its validity from it, with time, as the speculative knowledge would be gradually questioned and rejected if inconsistent with facts. The technological evolution causes the evolution in institutions and thinking. Modern science, as any other systematic knowledge, is thus considered ultimately a consequence of the changes in material reality.

In Mirowski's view (1988, p. 124), Veblen conceived science as developing independently from culture and society. This statement cannot be interpreted in a simple way, after our discussion on the theory of changes in the structures of knowledge, but in Mirowski's analysis of the materialism in Veblen's thought. Science deals with material and objective facts. As these would be, by principle, free from the subjectivity of the individuals who learn from them, science would be too – at least becoming more and more. According to Mirowski (1988), Veblen had read the Pragmatic school of philosophy in a wrong way, and because of that he did not admitted the role of metaphysics in his own work.

Unfortunately, Veblen confused pragmatism with “maxims of expedient conduct” (...) and consequently idealized the scientist as being in possession of a “matter-of-fact” approach to “the facts” and their evaluation. Ultimately, this led him to an extremely naïve sociology of science, where a class of industrial workers and engineers nurtured a set of colorless and nonteleological habits of thought as a result of their proximity to the “machine process” (...). (MIROWSKI, 1988, p. 123)

That could not be true as, according to Samuels, Veblen “was one of the earliest thinkers concerned with the social construction of meaning, rather than with the absolute category of truth, and with the formation of knowledge and/or belief as a product of group life, in particular institutional and cultural contexts” (1993, p. 79).

To Veblen, the nature of causality in any theory is inherently metaphysical and not a matter of pure observation (1919b, p. 33). It is attributed as a logical necessity in a system of knowledge, what does not reflect reality inevitably. Empirical observation, which is expressed in statistics and mathematical formulas, can only show disconnected variations in quantities and quality. Those variations alone do not inform much, besides the very own information (*ibid*). Thus, it is doubtful to state that Veblen defended a science based on empirical generalizations,

like Davis (1945) did. Furthermore, the author would be outdated in relation to the current debate in his time on the philosophy of science which agreed with Hume's⁶ logical proof, about the impossibility of absolute grounds to science from induction (DYER, 1986, p. 32). Hodgson (1998) rejects also the naïve empiricism in Veblen:

No understanding nor explanation is possible without theory. Veblen and Commons, as founders of the "old" institutionalism, knew that theory does not arise by induction from data. All empirical analyses presuppose a set of concepts and an implicit or explicit theory. For this reason, to start from stylized facts must itself require a prior conceptual framework. (p. 174).

Further on subjectivity in modern science, Veblen affirms that activity, in the sense of perceiving inanimate objects as if they were performing an action, is also not observed, but imputed by the scientist: "... activity is, of course, not a fact of observation, but is imputed to the phenomena by the observer" (VEBLEN, 1919a, p. 15). The epistemological purpose of it is to organize phenomena in a consistent way or in a dramatic form (*ibid*). Veblen does not consider the possibility of conceiving a theory "in terms of inert magnitude alone" (*ibid*), that is, eliminating subjectivity⁷, though he considers that this aim is becoming closer to be reached, in the modern habit of thought.

The very concept of modern science is based on metaphysical preconceptions, made clear by the author: "[t]he sciences which are in any peculiar sense modern take as an (unavowed) postulate the fact of consecutive change" (VEBLEN, 1919b, p. 32); "[t]he ultimate term or ground of knowledge is always of a metaphysical character. It is something of a preconception, accepted uncritically, but applied in criticism and demonstration of all sense..." (VEBLEN *apud* SAMUELS, 1993, p. 79).

In conclusion, if Veblen affirms that every piece of knowledge is based on metaphysical grounds, then every science, including modern science and his own scientific approach towards knowledge, has improvable roots, which are a matter of preconceptions. In this way, any causal association among facts is an imputation of subjectivity to Veblen, since causality is not an observable fact (VEBLEN, 1919b, p. 34).

6 To a brief description on the philosophy of science of David Hume, see KUNTZ (1983).

7 Except for mathematics, that he considered a purely formal science. To other visions on the nature of mathematics, see BACKHOUSE (1998).

Thus, there must be some justification to adopt some criteria of validation instead of others in modern science. The modern preconceptions are linked to these validation criteria in the habit of thought of the machine era. What distinguishes a true statement from the untrue ones is the consistency with material reality, which is something “extern” to human beings (VEBLEN, 1919a, p. 18). Hence, the validation criteria of the matter-of-fact “preconception” are able to distinguish objective and true theories from the subjective ones. We can conclude that, for Veblen’s instituted paradigm, there is one institutional set considered consistent with true knowledge, while other sets would diverge scientific speculation from “true” reality.

This is related to Veblen’s own concept of objectivity. Ferrater Mora (2001) introduces a division over western philosophy’s thoughts on objectivity: the first group is identified as the Traditional (Scholastic) and the second is called the Modern (Kantian). To the first group, objective materials are indeterminate and need a formal object to be considered real. The formal object is “what is firstly and *per se* apprehended by means of the awareness of the material object, *i.e.*, the reason by which something reaches the mind”⁸. The existence of material objects is, thus, conditioned by the mind, by the act of cognition: “To exist objectively is the same as being in the thought or the representative idea” (FERRATER MORA, 2001, p. 2129). The necessary conclusion from it is that “the fact of something being a material object does not amount to say, necessarily, that it is (“physically”) real” (*ibid*). On the other side, Kant and Baumgarten coincided objectivity to material reality (FERRATER MORA, 2001). “... the term ‘objective’ started to be used to designate “what is not [only] in the subject”, contrary to ‘subjective’, which is understood as “what is in the subject”” (FERRATER MORA, 2001, p. 2130). Veblen is therefore identified as belonging to the Kantian group in the matter of objectivity.⁹.

⁸ The citations of Ferrater Mora (2001) used in this work are our own translation. The originals are in Portuguese.

⁹ Dyer (1986) says that various authors recognise Kant as an influence in Veblen’s writings.

The special nature of the machine era's preconceptions and Veblen's self-referential problem

We believe that Veblen had a qualitatively different vision on the machine-guided preconception. Veblen would still think of it as a metaphysical preconception, but one of a special kind, which frees knowledge from human subjectivity. It is as if modern science was a consequence of the changes of habits of thought, as any other theoretical paradigm, although this very modern habit of thought refuses to take any subjective imputation because of its close contact to material reality.

One could say that this conclusion is within the modern habit of thought paradigm and could only be valid considering this. Regardless, we view incongruence in the affirmation of a metaphysical preconception that is free from human subjectivity. Any statement about the ontological base of knowledge is derived by subjective speculation. The own concept of matter-of-factness is also subjectively constructed, and cannot pretend to break away from it. In Veblen's system of thought, in order to be matter-of-fact something has to be impersonal, to take no account of expediency or purpose in its never-ending evolution. Moreover, the image of the machine, which is the analogy of the true functioning of nature, as inanimate and unintentional, is not proved. The comparison of speculative interpretation of facts with the image of the machine only provides objective and rigorous criteria of assessment of theoretical prepositions, if those metaphysical hypotheses are accepted.

Samuels defends the self-referentiability in Veblen's thought, *i.e.* what was declared about general knowledge, was also applicable to the modern system of knowledge, from which his theory would depart: "Veblen understood matter-of-factness to be a preconception system-specific to the technological circumstances under which it developed and flowered, and that therefore his analysis of preconceptions was self-referential" (SAMUELS, 1990, p. 695). We may summarise Samuels' (1990) thesis by saying that modern science is no better than other methodological approaches, and its conclusions are only valid within its own metaphysical frame.

... interpretation is interpretation-system specific, that **there are no meta-criteria on which to choose between alternative preconceptions**, et cetera, with any serious degree of conclusivity, except by selecting the premise on which rests the preconception thereby chosen, that there is no

independent interpretive or evaluative standpoint, that critique is always a matter of infinite regress with regard to the basis of critique. (SAMUELS, 1990, p. 703 e 704, emphasis added)

But the real force acting upon the convergence of the scientific analysis and the institutional framework is the changes in material reality. While the social influence in Veblen's theory of change in the habits of thought as a whole is clear, this influence is not so clear in his concept of modern science. In the end, it is not the institutional evolution that defines modern science (although it could be the fact for other systematic knowledge), but material reality itself, because institutions are determined by it, specially the modern ones, which are a product of the machine technology. Through this point of view, Veblen's theory is not self-referential.

Mirowski (1988) had an interesting point over Veblen's thought on the fundamentals of knowledge. The interpreter asserts that he thought he could escape from metaphysics by affirming the "objective" nature of matter-of-factness:

Veblen believed he could break out of the "logical circle" 10 (...) by resort to this lofty and otherworldly conception of science, and then using it to claim that he himself was merely applying the "matter-of-fact" attitudes to the economic sphere (MIROWSKI, 1988, p. 124).

In our view, the special nature of the modern scientific paradigm is related to Veblen's hypothesis on human cognition. Modern science results from idle curiosity (VEBLEN, 1919a, p. 17), and any pragmatic intromission is unwanted (VEBLEN, 1919a, p. 19), because it would result in the search of a convenient end to the scientific inquiry, whose nature is objective and unintentional. Pragmatic reasoning, being the expression of expediency and subjectivity, is contrary to science: "it is on the one hand knowledge of what had best be done, and on the other hand knowledge of what takes place" (VEBLEN, 1919a, p. 18).

Wisdom and proficiency of the pragmatic sort does not contribute to the advance of a knowledge of fact. It has only an incidental bearing on scientific research, and its bearing is chiefly that of inhibition and misdirection. Wherever canons of expediency are intruded into or are attempted to be incorporated in the inquiry, the consequence is an unhappy one for science, however happy it may be for some other purpose extraneous to science. The mental attitude of worldly wisdom is at cross-purposes with the disinterested scientific spirit, and the pursuit of it induces an intellectual bias that is incompatible with scientific insight. (VEBLEN, 1919a, p. 19)

10 The logical circle to which Mirowski refers to is the argument used by Veblen to expose the specificity of theories to its initial point of view (preconception) and its validity only in this framework.

The results from the idle curiosity are causal relations between facts that can be interpreted: “[t]he “interpretation” of the facts under the guidance of this idle curiosity **may [or may not]** take the form of antropomorphic or animistic explanations of the “conduct” of objects observed” (VEBLEN, 1919a, p. 7, emphasis added). This interpretation is derived from pragmatic knowledge and goes the other way from modern science, as it inputs a logic alien to the colourless facts. The institutional influence would occur at this point, as an *a posteriori* intromission, seeking to adequate the idly apprehended sequence of phenomena to the social habits of thought. “The system of knowledge, even in so far as its motives are of a dispassionate or idle kind, falls into the like terms [pragmatism], because such are the habits of thought and the standards of discrimination enforced by daily life” (JAMES apud VEBLEN, 1919a, p. 11). The institutions of modern society, taking the machine as the image of the functioning of the world, derive their canons of interpretation from something objective and external to human beings. That is where Veblen thought it could be escape from the subjective influence in knowledge.

The author has intuited some human activity that goes beyond human condition of subjectivity in order to allow the existence of modern science as he has conceived. Idle curiosity permits humans to make random connections between facts, ignoring their social and institutional contexts, at least in the first moment, when the individual apprehends the sequence of phenomena. What Veblen gets from the hypothesis of idle curiosity is empowerment of human beings with a direct access to the world of brute facts – though often blurred by incursions of subjectivity or pragmatic interpretation.

The key concept of idle curiosity is, nevertheless, questionable, even considering his ontological basis. Would it be possible for humans to act in such manner that they become mere blank photographic films, in which pure matter-of-fact information is imprinted? If such, then the thesis of a science growing more and more impersonal would be plausible. We consider doubtful such two-cleft system, of an idle and subject-independent apprehension of facts followed by the interpretation of such phenomena by the intromission of the habits of thought and subjectivity. The social and self influence on the conception of reality is in the root of every piece of knowledge and is felt also in the observation of phenomena. Not only theoretical speculation requires metaphysical grounds, as Veblen stated, but also our observation prepositions and what we define as phenomena. Furthermore, idle curiosity being conceived as it is denies the possibility of creativity, as it is only a self-unconscious tool of access to the world.

Any creative effort of the individual must mean deviation from the colourless reality, and, as such, should be repressed.

Conclusion

What we can conclude from Veblen's scientific prescriptions is that he wants to reduce the distance between matter-of-fact and speculative inquiries. To him, science was in the way of dealing both material and abstract reality the same manner, and that is so because the industrial era institutions have forced men to a closer contact with material reality and hence to think in these terms as ultimate. This would mean an impersonal validation criterion of theories, since matter-of-factness was thought as strictly objective. There is incongruence in admitting the inevitable role of metaphysics in any cognition process and basing his epistemological thoughts on such ontology, of sharp objective/subjective distinction.

The material determinism over his theory mitigates the role of institutions as a product of individual subjectivity, at the same time as enforces the objective character in the construction of habits of thought. Modern science is not what it is because of the deliberative social construction of the modern institutions and their bearings on knowledge, but it is the consequence of the changing in material reality caught passively by institutions. And that was the fundamental difference of the last habit of thought in comparison to the others, which were subjected by the human influence over institutions. The theory of institutional influence on knowledge is not applicable to the concept of modern science.

Even considering Veblen's proposal to modern science as plausible, we reach a pragmatic problem: if we confront two different theories that depart from the modern methodological proposals, which one would be true? Of course we are considering the possibility of there being two or more theories that use the evolutionary approach and reach different conclusions. And our assumption is connected to the very statement of Veblen, on the inevitability of metaphysics in scientific inquiry. In this point of view, objectivity is a subject-driven concept, *i.e.* not objective in the first place. There could be several distinct conceptions over a blind-guided, impersonal and cumulative process of change in phenomena. Consequently, neither we nor Veblen could answer to that question in his own terms, as he would wish to do.

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