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Habit, decision making and rationality: Comparing Thorstein Veblen and early Herbert Simon

Olivier Brette, Nathalie Lazaric and Victor Vieira

Abstract: The paper aims at contributing to the convergence between institutional and neo-Schumpeterian evolutionary economics. It intends to help unify the behavioral foundations of these two strands of thought, by returning to the original views of their main historical inspirations. It thus proposes a comparative analysis of the theory of human behavior developed respectively by Thorstein Veblen and Herbert Simon. The paper notably discusses how Simon's early work links together the notions of habit, rationality and the decision making process and to what extent his views are consistent, complementary or divergent with Veblen's ones. The paper highlights several commonalities between Simon's and Veblen's views on habits. However, Simon departs from Veblen in developing a dual model of human behavior, which clearly differentiates habit-based from decision-based behaviors. We argue that Neo-Schumpeterian evolutionary economists should go beyond this binary model and build on the Pragmatist-Veblenian approach in which these two dimensions are intimately entangled. This could allow them to take advantage of the most valuable insights of institutional economics regarding the interactions between individual choices and habits and institutions.

Keywords: habit; decision; rationality; Veblen; Simon

JEL Classification Codes: B15, B25, B31, B52, D03

Thorstein Veblen and Herbert Simon are two major figures of the criticism of the rational choice theory, which analyses economic behavior as utility or profit maximizing. Veblen (1898a, p. 73) is well-known for the sardonic portrait he made of the *homo oeconomicus*, “a lightning calculator of pleasures and pains, who oscillates like a homogeneous globule of desire of happiness under the impulse of stimuli that shift him about the area, but leave him intact.” In 1978, Simon was awarded The Sveriges Riksbank Prize in Economic Sciences in

Memory of Alfred Nobel “for his pioneering research into the decision-making process within economic organizations,” namely on the way people make decisions under conditions of limited computational and informational resources. At first glance, Simon’s approach to human behavior seems at odds with Veblen’s, which is centred on the notions of instincts and habits. However this basic divergence may be misleading. On the one hand, Veblen explicitly integrates deliberation and choices into his theory of human behavior. What he rejects is the principle according to which these factors should be given primacy in the analysis of economic behavior. On the other hand, Simon recognizes the major role of habits in governing human behavior, especially in his early writings (Simon [1947] 1976,¹ 1955, 1956, 1957, 1959; March and Simon 1958).

Some scholars have suggested the existence of an intellectual lineage between Veblen and Simon. There are indeed some commonalities between the arguments, which both authors oppose to the rational choice theory (Rutherford 2011, pp. 316-317). Moreover Veblen and Simon were inspired by common references outside economics, especially in psychology and biology. Finally, as Hodgson (1998, p. 425) points out, “[a]lthough identifying Commons rather than Veblen or [John Maurice] Clark, Simon (1979, p. 499) himself clearly acknowledges his debt to American institutionalism.” Drawing the lines of connection and disconnection from Veblen to Simon through interwar American institutionalism is a fascinating but very intricate task, which largely remains to be done. The current paper pursues a different objective.

Our comparative analysis of Veblen’s and Simon’s views is above all motivated by contemporary concerns, namely contributing to the process of convergence, that has been promoted over the last decades, between institutional economics and neo-Schumpeterian (“post-1982”) evolutionary economics² (e.g. Nelson 2002; Hodgson 2004b, 2013; Brette 2006; Dopfer and Potts 2008; Hodgson and Knudsen 2010; Hodgson and Stoelhorst 2014;

Stoelhorst 2014; Winter 2014; Witt 2014). Indeed one can regret that these two major strands of heterodox economics have developed independently, as they not only share crucial commonalities which could allow the development of closer links, but both could benefit from exploiting their complementarities. In this respect, many scholars – notably among those mentioned above – have identified the merging of behavioral foundations as a crucial and fruitful point of convergence between the two strands. We agree with this insight and argue that such a work could benefit from returning to the behavioral views of the main historical inspirations of institutional economics and neo-Schumpeterian evolutionary economics, namely respectively Veblen and Simon. Identifying the commonalities, complementarities, as well as divergences between these two authors whose conceptions have shaped (largely independently) the development of heterodox economics during the XXth century may help elaborate on a unifying behavioral framework for contemporary institutional and neo-Schumpeterian evolutionary economics.

The paper thus develops a comparative analysis of the theory of human behavior built respectively by Veblen and Simon, with a special focus on the early work of the latter which contains a far more comprehensive approach of behavior than his later writings (especially subsequent to 1958). We notably aim at understanding how Simon links together the notions of habit, rationality and the decision making process and to what extent his views are consistent, complementary or divergent with Veblen's ones.

The rest of the paper is organized as follows. Section 1 sketches the respective background, inspirations, as well as scientific project of both authors. Section 2 compares the way they define and characterize habits. Section 3 deals with the "habit life cycle," namely the process of formation, reinforcement and change of habits. It notably discusses the way Veblen and Simon respectively analyse the relations between habit, rationality and choice. Section 4 gives some insights regarding the social dimensions of habits, as well as their role

in the interactions between individuals, organizations and institutions. This leads us to highlight some key dimensions of the legacy of Veblen and Simon in contemporary heterodox economics and identify some conditions and opportunities of a unifying behavioral framework for institutional and neo-Schumpeterian evolutionary economics. Section 5 concludes the essay.

Putting Veblen's and Simon's theories of human behavior in context

Comparing the views of two authors about a specific aspect of their respective thought requires proceeding with caution, in order to avoid the traps of a reductionist as well as anachronistic reading. The reductionist pitfall would consist in considering certain theses of each author as single elements, independently from the rest of his system of thought. In the present case, it would be misleading to take Veblen's and Simon's views on human behavior out of their respective scientific project and overall theoretical system. Taking into account the historical and intellectual context of each author is also crucial to avoid the trap of anachronism, considering that almost half a century separates early Simon releasing the first edition of *Administrative Behavior* (Simon [1947] 1976) from mature Veblen publishing some of his main essays and books (Veblen 1898a, 1899).

Undoubtedly Veblen and Simon have common references. Their views on human behavior both fit in ambitious scientific projects aiming at rebuilding economics on new foundations, which have been widely inspired by other disciplines, especially biology and psychology. The Darwinian Revolution as well as William James' psychology are major references for both authors. However, these common inspirations should not conceal major gaps between their respective approaches to human behavior and more generally between their overall theoretical systems. These gaps notably derive from very different backgrounds.

Veblen's training was basically philosophical. In 1884, he defended a PhD thesis, which seemingly discussed Herbert Spencer's and Immanuel Kant's thought (Dorfman 1934, p. 46; Tilman 1996, p. 62). In the same year, he published his first article, which was devoted to Kant's *Critique of Judgment*, in the *Journal of Speculative Philosophy*, the most important American review in philosophy at that time (Veblen 1884). This paper reveals the influence of Charles Sanders Peirce, the founder of American Pragmatism (Daugert 1950, p. 16), of whom Veblen attended the graduate seminar in "Elementary Logic" in 1881 at Johns Hopkins University. Although Veblen makes no reference to Peirce in his published writings, there is strong evidence of the influence he exerted on his thought, especially on his theory of knowledge and his theory of habit (Dyer 1986; Griffin 1998; Brette 2004). These two components of Veblen's system of thought are closely entangled, just as they are in Peirce's system.³ Actually one can consider that Veblen originally found in Peirce's approach to habit a relevant way to overcome the traditional opposition between rationalism and empiricism. Following Kant, Veblen argues that the relationship of man to the world is always mediated by mental structures. For instance, Veblen (1908, p. 34fn) asserts that "causation is a fact of imputation, not of observation, and so cannot be included among the data." Elsewhere he says that "[t]he principle, or 'law,' of causation is a metaphysical postulate; in the sense that such a fact as causation is unproved and unprovable" (Veblen 1914, p. 260). However, he opposes Kant's view that the mental structures, which filter and shape man's understanding of the world, would form an *a priori* universal and immutable matrix. For Veblen, they consist in institutions, which are embodied within the individual habits of each member of a given (i.e. historically and geographically situated) society. Veblen (1914, p. 262) then argues that "the concept of causation which so characterises the modern sciences is of a particular and restricted kind;" it is the "modern European concept of causation." The principle of

continuity, which Veblen claims to justify the existence of habit in human beings, well illustrates his philosophical relation to the notion of habit (see Section 3).

This philosophical standpoint does not preclude Veblen's will to base his theory of human behavior on the scientific advances of his time. Veblen notably refers to three contemporary leading psychologists and physiologists, namely William James, whose *Principles of Psychology* he frequently quotes, William McDougall and Jacques Loeb (see in particular Veblen 1906, 1914). These authors fed Veblen's criticism against the rational choice theory and his endorsement of modern psychology, based on instincts and habits (Murphey 1990; Tilman 1996; Lewin 1996; Twomey 1998; Hodgson 2004b, 2010; Brette 2004; Lawlor 2006). For instance, Veblen (1898a, p. 74) asserts that "[t]he later psychology, reinforced by modern anthropological research, gives a different conception of human nature [from the hedonistic approach]. According to this conception, it is the characteristic of man to do something, not simply to suffer pleasures and pains through the impact of suitable forces." The reference to anthropology in the previous quotation relates to another key point to understand the framework in which Veblen develops his theory of habit. Indeed his scientific project is influenced by the emergence of anthropology as a discipline in the late nineteenth century, due to Henry Sumner Maine, Lewis Henry Morgan, Edward Burnett Tylor, and to some extent to Herbert Spencer (Edgell and Tilman 1989; Mayhew 1998; Brette 2004). This intellectual context is likely to be a major determinant of Veblen's definition of evolutionary economics focused on the dynamics of institutions: "an evolutionary economics must be the theory of a process of cultural growth as determined by the economic interest, a theory of a cumulative sequence of economic institutions stated in terms of the process itself" (Veblen 1898a, p. 77).

Philosophy is not a main inspiration to Simon, contrary to Veblen.⁴ But Simon's training was also greatly influenced by biological and psychological thinking. Besides William James, Edward C. Tolman is Simon's main reference in this respect.⁵ *Purposive Behavior in Animals and Men* (Tolman 1932) is indeed probably Simon's most pervasive background influence, at the crossroads between evolutionary biology and psychology. Simon derives from Tolman a way of systematically analysing decision making or problem solving (whether at an individual or organizational level, whether human or artificial) as a matter of an organism trying to adapt to its environment (see specifically Simon 1956). Acknowledging that the adaptive abilities of most organisms confronted to complex environments are limited, the need to inquire into the organism's inner processes has been the hallmark of Simon's work. Because organizations, as well as men, are mostly imperfectly adapted organisms, understanding and predicting their behaviors require more than simply examining the surrounding environment in the light of the aims at hand; it requires opening the black boxes that lie within.⁶ From this very starting point, Simon explored the administrative processes, before focusing on the mental phenomena.

During the 1950s, Simon's research program progressively led him out of economics to find the author exploring, deeper and deeper, the human mind. By the late 1950s, Simon can mostly be considered as a psychologist – although attaching Simon to a sole discipline is certainly inappropriate. For the sake of the present work, we have settled 1958 as a milestone. The 1950s are the scene of a very thought-provoking activity. Game theory, decision theory, cybernetics, artificial intelligence, psychology, sociology, political science and still other lines of thought converge to help understanding human behavior. Simon is at the very heart of this convergence, from which seems to emerge an interdisciplinary field: the “behavioral sciences.”⁷ Trained as a political scientist, Simon's early concerns and works led him to economics, psychology and the mathematical methods in social sciences. In the mid-1950s,

Simon's crucial collaboration with Allen Newell set the ground for pioneering works in cognitive psychology and artificial intelligence.⁸ The year 1958 is quite special to Simon's career. It is the year he published his seminal book on organizations with James G. March (March and Simon 1958). But it is also the year Newell and Simon organized the first RAND summer seminar on simulation techniques. The authors consider this event as a breaking point in the landscape of modern psychology, as the cognitive revolution was then enacted and the information processing approach to which they prominently contributed acquired its *lettres de noblesse*. From that point on, Simon's interest in psychology as well as his scepticism toward economics increased.

The nature of habit

Veblen frequently asserts the importance of habit in governing human behavior. However, despite its significance in his theoretical system, one must admit that he does not give any precise and exhaustive definition to this notion in his writings. As a consequence, a debate has developed regarding the exact meaning Veblen gives to habit, in particular whether he defines it as a "propensity to behave" (Hodgson, 2004a; 2004b; 2010) or as a "repeated form of conduct" (Lawson, 2015). Even if it seems fruitless to try to find strong evidence in Veblen's writings to conclude the debate, we think that there are good reasons to admit that he does not consider habit as a behavior as such, but, following C.S. Peirce and W. James, as "a *propensity* to behave in a particular way in a particular class of situations" (Hodgson 2004a, pp. 169-171; 2004b, pp. 652-653; 2010, p. 4). Even if he does not explicitly endorse the Pragmatist definition of habit, the influence which Peirce seems to have exerted on his thought and the explicit reference he makes to James' *Principles of Psychology* (see Section

1) suggest that he had a good knowledge of their approach of habit and would have expressed his disagreement with it, if need be.

In *The Theory of the Leisure Class*, Veblen presents his views on habit, when analysing the patterns of consumption corresponding to the different socioeconomic classes of society. In this respect, he asserts that “[a] standard of living is of the nature of habit. It is an habitual scale and method of responding to given stimuli” (Veblen 1899, p. 106). Moreover, the very terms used by Veblen to characterize habits echoe James’ (1892, p. 134) definition: “An acquired habit, from the physiological point of view, is nothing but a new pathway of discharge formed in the brain, by which certain incoming currents ever after tend to escape.” The reference to “a discharge [which] seek[s] the accustomed outlet” (Veblen 1899, p. 106) indeed appears as a reminder of James’ vocabulary. Besides, Veblen agrees with James’ viewpoint according to which one of the main features of habit lies in the difficulties man faces to break it once set, even if this resistance to change may be more or less important depending on different factors: the intensity and the length of habituation (namely the process of forming or acquiring a habit), the relations between a given habit and the other habits of an individual, etc. In this respect, Veblen (1899, pp. 107-108) argues that “[i]n general, the longer the habituation, the more unbroken the habit, and the more nearly it coincides with previous habitual forms of the life process, the more persistently will the given habit assert itself.” Finally, Veblen (1899) already distinguishes two kinds of habits, namely “habits of thought” and “habits of life,” the latter referring to habits of action in the sense of “doing something.” This distinction is important to the extent that he will develop in his further work the relations between these two categories of habits, notably the way habits of life may shape the forming of habits of thought.

It is in *The Instinct of Workmanship and the State of the Industrial Arts* that Veblen (1914) gives his most accomplished analysis of habits, notably regarding the links between habit and

instinct (Asso and Fiorito 2004). In the main, instincts are to be viewed as basic propensities, that are biologically inherited, and whose injunctive form is quite vague. Veblen notably puts forward the importance of four kinds of instincts in the socioeconomic dynamics, namely “the idle curiosity,” “the parental bent” – which should be understood as “the parental solicitude in mankind” (Veblen 1914, p. 26) – “the instinct of workmanship” as well as a set of rivalry instincts – in which Veblen includes “the proclivity [...] to acquisition” (p. 11), “the instinct of pugnacity and its attendant sentiment of anger” (p. 32), or the propensity to “self-aggrandisement” and “self-seeking” (p. 45). Veblen (1914, p. 38) argues that “[i]n man the instincts appoint less of a determinate sequence of action, and so leave a more open field for adaptation of behaviour to the circumstances of the case” through the development of habits. As Hodgson (2004b, p. 655) sums up: “for Veblen, habits were additional and necessary means for instinctive proclivities to be pursued in a changing environment.”

All these insights are consistent with (i.e. at least non contradictory to) a definition of habit as an acquired propensity to behave in a particular way, which is triggered by a particular stimulus or context. Besides, one should acknowledge that such a definition has significant theoretical advantages. It allows to clearly distinguish the process of habituation, which generally depends on the repetition of behavior, from the outcome of this process, namely the habit itself, which may be more or less frequently actualized – depending notably on the frequency of the situations in which the given habit is triggered. Besides, defining habit in terms of propensity to behave rather than behavior is a fruitful way to analyse the mechanisms through which habits may be transmitted, beyond strict face-to-face mimicking. Finally, it allows to acknowledge that a same habit may give birth to a certain diversity of actualizations.

In *Administrative Behavior*, Simon ([1947] 1976) does not give any precise definition of habit either. The references he makes to James and Dewey in the short section specifically

devoted to this notion (pp. 88–89) suggest some commonalities between his own approach and the Pragmatist and Veblenian views. However, it is difficult to derive from his writings whether he agrees or not with their approach of habit as a propensity. Actually Simon considers above all habit in reference, if not in opposition, to decision. In his view, “[h]abit performs an extremely important task in purposive behavior, for it permits similar stimuli or situations to be met with similar responses or reactions, without the need for a conscious rethinking of the decision to bring about the proper action.” This assertion is congruent with William James’ viewpoint according to which “in habitual action [...] the only impulse which the intellectual centres need send down is that which carries the command to *start*” (James 1892, p. 141).

In the main, Simon puts forward three major features of habit, which all distinguish it from decision. First, habit is associated to behavioral rigidity, namely to a stable association between stimuli and behavioral responses. Second, habit relates to a quick time between the advent of stimuli and the behavioral responses. Third, habit is characterized by a cognitive rigidity, namely by the implementation of automatic, namely non-reflective and even unconscious, mental mechanisms. This last feature is probably the most important for Simon to characterize habit and contrast it to decision.

It should be acknowledged that some elements in Simon’s writings allow to qualify this binary vision of behavior. Indeed, Simon’s view of the decision making process rests on the implementation of cognitive mechanisms, which are to some extent automatically activated. More generally, some assertions may lead to interpret the distinction between habit and decision in terms of continuum. This is notably the case when considering the learning process:

In learning to typewrite, the student tries to pay close attention to each minute movement of his fingers, and to the relation of each mark on the copy to each key on the instrument. Only through a gradual and

fumbling adjustment of his movements does he achieve the necessary coordination of eye with hand. When, by practice, a certain point in skill has been reached, it proves no longer necessary to give attention to integrations at this lowest level. The mere desire for the end of the action – the letter to be printed – brings about the act without further will. When this step has been reached, habit or skill takes over the integration which was first achieved by attention and desire to learn. (Simon [1947] 1976, p. 88)

However these qualifications are not sufficient to challenge the basic principle of a dual model of human behavior. Simon will stand by the opposition between habit and decision in his further work, while referring to it under different expressions, such as “routinized responses” *versus* “problem-solving responses” (March and Simon 1958).⁹

The habit life cycle

Comparing Veblen’s and early Simon’s views on habits crucially requires to analyse their respective approach of the habit life cycle, namely the process of formation, retention and change of habits. However, before getting to the heart of the matter, we have to consider the fundamental causes which both authors put forward to explain why human beings are creatures of habits.¹⁰

Both Veblen and Simon advance some basic reasons, which lead to admit that human behaviors are guided by habits. There are some commonalities in the arguments they develop in this respect. Both indeed resort to William James’ rationale that habit allows human beings to save intellectual resources, which can then be used to face original situations and solve new problems. To the extent that “habit diminishes the conscious attention with which our acts are performed,” “the upper regions of brain and mind are set comparatively free” (James 1892, pp. 138-140). For James, the ability of human being to carry out diverse, complex as well as novel activities is an evidence of his (her) proclivity to form and follow habits:

Man is born with a tendency to do more things than he has ready-made arrangements for in his nerve-centres. [...] If practice did not make perfect, nor habit economize the expense of nervous and muscular energy, he would be in a sorry plight. (James 1892, p. 138)

From his earliest work onwards, Simon clearly endorses this argument. In *Administrative Behavior*, he argues that “[h]abit permits the conservation of mental effort by withdrawing from the area of conscious thought those aspects of the situation that are repetitive.” Then “[h]abit permits attention to be devoted to the novel aspects of a situation requiring decision” (Simon [1947] 1976, p. 88). In the wake of James, Simon analyses the propensity of man to adopt habits as a way to save limited cognitive resources, namely “attention” (Simon [1947] 1976), or “information gathering” ability and “computational capacity” (Simon 1955). While Simon has largely focused his interest on the decision making process in his overall work, he acknowledges in his earlier writings that habit-based behavior is much more frequent than decision-based behavior. Simon ([1947] 1976, p. 108) indeed argues that “[t]he pattern of human choice is often more nearly a stimulus-response pattern than a choice among alternatives.” This assertion is also interesting to the extent that it reveals an extensive conception of the notion of choice and rationality. In *Administrative Behavior*, Simon indeed oscillates between two different views of rationality and of its relation to habits.

On the one hand, Simon defines rationality in terms of *process*. In this perspective, human behavior is rational to the extent that it derives from a conscious evaluation of the set of possible options and of their respective consequences: “Rationality demands that a conscious choice be made among competing ‘goods’ instead of leaving the choice to the caprice of attention-directing stimuli” (Simon [1947] 1976, p. 92). This conception of rationality, which relates to the process of “choice among alternatives” in the aforementioned quotation, can be viewed as a proto-concept of “procedural rationality,” which Simon developed later. In this

conception of rationality, the role of habit is quite ambivalent. As we said, habits make the exercise of rationality possible to the extent that they allow cognitive resources to be devoted to novel and complex situations. But they are also hindrances or boundaries to rationality.

Simon ([1947] 1976, p. 90) asserts that:

In most cases, there seems to be a close relation [...] between the spheres of attention and of rationality.

That is, docility is largely limited by (1) the span of attention, and (2) the area within which skills and other appropriate behaviors have become habitual. Hence to a considerable extent, the limits upon rationality [...] are resultants of the limits of the area of attention.

The notion of “docility” which Simon here resorts to is explicitly borrowed from Tolman. As exhibited in human behavior, “docility” refers to a situation in which “he [human being] observes the consequences of his movements and adjusts them to achieve the desired purpose,” it “is characterized, then, by a stage of exploration and inquiry, followed by a stage of adaptation” (Simon [1947] 1976, p. 85). The previous quotation thus highlights the significance Simon confers to the notion of habit in his early theory of bounded rationality: human rationality appeared bounded above all by the cognitive and behavioral rigidities of man, namely to a large extent by habits.

On the other hand, Simon defines rationality in terms of *results*. In this perspective, human behavior is rational to the extent that it gives birth to appropriate results – as an external observer could appreciate – whatever the nature of the process, which led to this result. This conception announces to some extent the notion of “substantive rationality,” which Simon developed later on. This definition of rationality allows habits to be considered as “rational,” contrary to the first view of rationality. As Simon ([1947] 1976, p. 91) argues:

It appears, then, that in actual behavior, as distinguished from objectively rational behaviour, decision is initiated by stimuli which channel attention in definite directions, and that the response to the stimuli is partly reasoned, but in large part habitual. The habitual portion is not, of course, necessarily or even usually irrational, since it may represent a previously conditioned adjustment or adaptation of behavior to its ends.

Finally, it is to be stressed that Simon also puts forward a *motivational* rationale, besides the *cognitive* arguments previously exposed, to justify the proclivity of man to follow habits. For Simon, following habits can be viewed as an expression of the “satisficing” nature of human behavior, in the sense that it leads, in the main, to satisfying results. Now Simon’s thesis of satisficing rests not only on the existence of cognitive constraints, but also on a conception of man which admits the idea of satiation (Vieira da Silva 2001). For instance, Simon (1959, pp. 262-263) asserts that:

The notion of satiation plays no role in classical economic theory, while it enters rather prominently into the treatment of motivation in psychology. In most psychological theories the motive to act stems from *drives*, and action terminates when the drive is satisfied. Moreover, the conditions for satisfying a drive are not necessarily fixed, but may be specified by an aspiration level that itself adjusts upward or downward on the basis of experience.¹¹

All things considered, habit is thus at the heart of Simon’s early approach to rationality, whatever meaning he gives to the notion.

James’ rationale on the economising capacity of habit also underlies to some extent the justification Veblen gives to the importance of habit in human behavior. As Hodgson (1998, p. 425) notes, “the ironic phrase ‘lightning calculator’ clearly suggests that there is a problem with the assumption that agents have rapid and unlimited computational abilities.” However, it is to be acknowledged that the argument of limited cognitive resources is not the crux of

Veblen's rationale to support the idea that human behavior is guided by habits. In his view, as well as in Pragmatist writings, there are more fundamental reasons to the existence of habits, which relate to a principle of continuity in human behavior. This principle opposes the idea that any behavior can be analysed as a discrete case. As Lawlor (2006, p. 333) argues: "James elaborates a theory of how habits become the seat of an individual's own set of personal ends in life [...]. Habits form the constituent parts of consciousness, of the sense of person, the 'me' of an individual. James describes a personality as 'a bundle of habits'." In a similar vein, Veblen considers habit as the very basis of the continuity of the individual, from a synchronic as well as diachronic viewpoint. Considered from a synchronic point of view, the principle of continuity means that at a given time, the different fields of activities in which an individual is engaged are dependent on one another. As Veblen (1908, p. 39) argues, "[t]he individual subjected to habituation is each a single individual agent, and whatever affects him in any one line of activity, therefore, necessarily affects him in some degree in all his various activities." The diachronic dimension of the principle of continuity implies that the characteristics of the current behavior of an individual are "path-dependent." It notably means that the content and intensity of the habits carried by an individual at a given time are dependent on the previous process of habituation. Finally habits are the very foundation of the continuity between individual and society, namely of the social nature of individuals, and of the (diachronic and synchronic) continuity of the society itself (see Section 4).

Let us now consider more specifically the way Veblen and Simon respectively analyse the process of formation, retention and change of habits. A major aspect of the issue concerns the role of choice in this process. In coherence with James (1892), once more, both Veblen and Simon consider that habits are often deliberately formed. In Simon's view, a habit is usually formed as a response to a recurrent problem situation. The importance Veblen gives to

choices in the formation of habits is less evident. Actually, he was frequently criticized for having neglected the intentionality of human beings in his approach to behavior. For example, Murphey (1990, pp. xl-xli) characteristically argues that in Veblen's view, "[i]ndividuals are just particular combinations of instincts and habits, and their behaviour is explained by their twin heritage. There is no significant role for human freedom, if indeed there is any such thing." Contrary to this view, Veblen (1914, p. 38) asserts that the formation of habits results, partly at least, from the conscious and deliberate will of individuals:

When instinct enjoins little else than the end of endeavour, leaving the sequence of acts by which this end is to be approached somewhat a matter of open alternatives, the share of reflection, discretion and deliberate adaptation will be correspondingly large. The range and diversity of habituation is also correspondingly enlarged.

Of course, Veblen also puts forward the effects which the current "cultural scheme" (Veblen 1908, p. 39) or "cultural complex" (Veblen 1909, p. 241) of society exerts on the habituation process. In his view, the prevalent institutional system constrains and shapes, more or less strongly, the formation of habits. But whatever the importance of these effects on the habituation process, they do not affect the reflexive nature of habits. For Veblen, man is usually conscious of the bearings which his (her) habits give to his (her) action and thought. He indeed argues that:

Like other animals, man is an agent that acts in response to stimuli afforded by the environment in which he lives. Like other species, he is a creature of habit and propensity. But in a higher degree than other species, man mentally digests the content of the habits under whose guidance he acts, and appreciates the trend of these habits and propensities. He is in an eminent sense an intelligent agent. (Veblen 1898b, p. 80)

Both Veblen and Simon consider inertia or retention as a key feature of habits. In Veblen's view, this characteristic notably derives from the continuity principle, which underlies his view of individual. Indeed he argues that the relations between habits reinforce them mutually. Moreover the property of transmissibility between individuals, which characterizes habit ensures its reproduction over time. For Simon, a habit tends to prevail as long as the effects it produces are satisfying. Simon seems to suggest that the retention or, on the contrary, the riddance of a habit roughly derives from a balance between the benefits and costs of change: "Activity very often results in 'sunk costs' of one sort or another that make persistence in the same direction advantageous" (Simon [1947] 1976, p. 95). However, it would be erroneous to interpret the retention of a habit as the renewed outcome of a repeated calculation. March and Simon (1958, p. 173) interestingly argue that:

Individuals and organizations give preferred treatments to alternatives that represent continuation of present programs over those that represent change. But this preference is not derived by calculating explicitly the costs of innovation or weighing these costs. Instead persistence comes about primarily because the individual or organization does not search for or consider alternatives to the present course of actions unless that present course is in some sense "unsatisfactory."

This view comes close to the Pragmatist as well as Veblenian approach, which tends to reverse the traditional view of rationality, in the sense that "[i]ts role is to hinder rather than further our action process" (Kilpinen 2005, p. 2). In other words, individuals do not necessarily need incentives or motives to start acting but the latter are required to change the habits that govern their ways of acting. In this perspective, "[i]t is no more action that needs to be explained, it rather is a change in action that demands an explanation" (Kilpinen 2005, p. 4). Simon ([1947] 1976, p. 95) seems not far from this viewpoint, when he asserts that "[a] reason for [behavior] persistence is that the activity itself creates stimuli that direct attention

toward its continuance and completion.” However, he does not stretch the argument further. Simon finally remains attached to a dual model of human behavior, based on the opposition between habit and decision.

On the contrary, Veblen endorses a conception of human behavior in which habit and choice are intimately entangled. Moreover, he comes to give primacy to habit over choice, which does not mean that he denies individuals the capacity to make decisions. Veblen indeed explicitly asserts that “the relation of sufficient reason enters very substantially into human conduct. It is this element of discriminating forethought that distinguishes human conduct from brute behavior” (Veblen 1909, p. 238). What he points out is the necessity to integrate the decision making process itself into a broader approach to human behavior. Actually, Veblen’s adherence to the principles of cumulative causation and determinacy leads him to consider that, just as every phenomenon, human intentionality should not be considered as an “uncaused cause” (Hodgson 2004a, pp. 153-157; 2010, p. 2). In other words, “the relation of sufficient reason [should be] admitted only provisionally and as a proximate factor in the analysis, always with the unambiguous reservation that the analysis must ultimately come to rest in terms of cause and effect” (Veblen 1909, p. 238). It means that explaining the habitual and institutional foundations of motives, preferences and beliefs which enter any human decision should be considered as a key task of economics. In brief, choices cannot be rightly analyzed and understood without considering the set of prior habits which are carried by the individual who deliberates, especially those shared habits which underlie the prevailing institutions.¹²

Habits, organizations and institutions

The last remark leads us to address the major issue of the relations between individual habits, organizational routines, and institutions. Given the scope of the issue and the diversity of the questions to which it relates, we will focus the comparison on a few aspects only, with the objective of drawing some contemporary implications of our comparison between Veblen's and Simon's views on human behavior.

Veblen and Simon both agree with the two following views. *First*, shared habits are a vital foundation of the social nature of man. *Second*, shared habits, which underlie organizational routines and institutions, fulfil a crucial function of coordination between individuals. Beyond this agreement, the two authors diverge in the emphasis they put respectively on these views and on the way they link up.

Veblen gives the primacy to the first assertion. The acknowledgement of the social nature of man is a key dimension of his system of thought. In his view, the social state of man rests on two pillars: instincts and habits. Veblen gives an evolutionary justification to the existence of a "parental bent" namely of a "parental solicitude in mankind" among the instinctive inheritance of man: "Archaic man was necessarily a member of a group, and during this early stage, when industrial efficiency was still inconsiderable, no group could have survived except on the basis of a sense of solidarity strong enough to throw self-interest into the background" (Veblen 1898b, p. 87). Habit is the other substrate of the social state of man, namely of his relations to his fellows and of the social structures themselves, i.e. institutions. For Veblen (1923, p. 101n.), "an institution is of the nature of a usage which has become axiomatic and indispensable by habituation and general acceptance." Veblen (1914, pp. 38-39) puts forward the transmissibility of habits to explain the enduring institutions over time: "In man, [...] habitual acquirements of the race are handed on from one generation to the

next, by tradition, training, education, or whatever general term may best designate that discipline of habituation by which the young acquire what the old have learned.” As previously stated, Veblen argues that institutions are a vital factor in structuring social interactions: “the institutional apparatus [is] the habitual scheme of rules and principles that regulate the community’s life” (Veblen 1914, p. 35). Institutions indeed give a social significance to individual behavior. They allow each member of a given society to make the behavior of his or her fellows understandable and to some extent predictable. Indeed, “[n]ot only is the individual’s conduct hedged about and directed by his habitual relations to his fellows in the group, but these relations, being of an institutional character, vary as the institutional scheme varies” (Veblen 1909, p. 242). It is to be stressed that, in Veblen’s view, the function of coordination which institutions fulfil is a consequence, rather than a cause, of the social state of man and of the habit-based character of his behavior. The following assertion is quite characteristic of this line of reasoning:

This apparatus of ways and means available for the pursuit of whatever may be worth seeking is, substantially all, a matter of tradition out of the past, a legacy of habits of thought accumulated through the experience of past generations. [...] Under the discipline of habituation this logic and apparatus of ways and means falls into conventional lines, acquires the consistency of custom and prescription, and so takes on an institutional character and force. The accustomed ways of doing and thinking not only become an habitual matter of course, easy and obvious, but they come likewise to be sanctioned by social convention, and so become right and proper and give rise to principles of conduct. By use and wont they are incorporated into the current scheme of common sense. (Veblen 1914, pp. 6-7)

The prevailing institutional system which structures the social interactions within a given society at a given time is more an emergent effect of the dynamic interactions between

instincts, institutions and the infrastructural conditions, than a deliberate construct meeting a specific kind of collective problems and needs (Brette 2003, 2004).

Simon also explicitly acknowledges the social nature of man: human beings are to be viewed as members of social groups, whether organizations or society as a whole. Simon ([1947] 1976, pp. 100-101) argues that:

[T]he mechanisms leading to the integration of behavior might be interpersonal. If organizations and social institutions be conceived, in the broad sense, as patterns of group behavior, it is not hard to see that the individual's participation in such organizations and institutions may be the source of some of his most fundamental and far-reaching integrations. [...] Human rationality, then, gets its higher goals and integrations from the institutional setting in which it operates and by which it is molded.

This quotation, as well as a number of other references in Simon ([1947] 1976), is very close to certain assertions of Veblen. More generally, here is for sure an element of continuity between pre-World War II American institutionalism and early Simon's views. However, beyond this commonality, there seems to be a divergence between Veblen and Simon regarding the way they integrate the argument of the social state of man in their reasonings. Contrary to Veblen, Simon ([1947] 1976, p. 102) makes this argument a consequence, rather than a cause in his rationale:

The rational individual is, and must be, an organized and institutionalized individual. If the severe limits imposed by human psychology upon deliberation are to be relaxed, the individual must in his decisions be subject to the influence of the organized group in which he participates. His decisions must not only be the product of his own mental processes, but also reflect the broader considerations to which it is the function of the organized group to give effect.

What seems to interest Simon above all in the social interactions which man is prompt to develop lies in the fact that they allow to overcome the limited cognitive resources of human beings. In other words, the social condition of man mainly appears as a result of his need to coordinate with his fellows in order to manage complex activities.

This difference of emphasis reveals some discrepancy in the key research issues addressed by Veblen and early Simon. This discrepancy has become more and more important in Simon's later work, as he increasingly focused on the decision making process, and more specifically on the issue of problem solving (Newell and Simon 1972; Sent 2000). This does not mean that Simon came to deny the significance of habit in governing human behavior but that he decided to leave this issue aside. *Administrative Behavior* was republished three times after 1947. In his introduction to the last edition which dates from 1997, a few years before his death, Simon ([1947] 1997, p. viii) stresses: "In this fourth edition, as in the previous ones, the text of the original work is kept intact, for there is essentially nothing in it that I wish to retract." Moreover, the commentaries he adds to supplement the original text explicitly mention "the large role played by habit and routine in organizations" as well as in individuals:

Habits and routines may not only serve their purposes effectively, but also conserve scarce and costly decision-making time and attention. For that reason, a very large part of an organization's activities (or a person's) is likely to proceed according to established rules and routines, which may be reviewed at shorter or longer intervals for possible revision. (Simon [1947] 1997, p. 89)

Far from denying the general theory of human behavior he developed in his early writings, Simon focused his later work – especially after 1958 – on what he considered as the most interesting part of human behavior to explore. As he retrospectively wrote:

Administrative Behavior has served me as a useful and reliable port of embarkation for voyages of discovery into human decision-making: the relation of organization structure to decision-making, the formalized decision-making of operations research and management science, and in more recent years, the thinking and problem-solving activities of individual human beings. (Simon [1947] 1997, p. viii)

This evolving research program has been spurred by early Simon's dual model of behavior, which clearly differentiates habit-based from decision-based behaviors, contrary to Veblen's approach in which these two dimensions are closely entangled. Whereas the latter makes it impossible to really understand – and thus study – choices and decision making without considering habits and habituation, Simon's binary vision of human behavior opens the possibility to separate the analysis of decision making and rationality from the analysis of habits. Simon fully exploited this possibility and contributed, at the same time, to reinforce the importance given to rationality and choice in post-World War II economics. According to Cohen (2007, p. 505):

Simon's change of stance [on the relations between decision, habit and action, compared to the Pragmatist views of James and Dewey] was a turning point. As he hoped, it opened the door to a more scientific treatment of the activities and problems of managerial life. *A Behavioral Theory* [Cyert and March 1963] is one of the most splendid results of this new perspective. But at the same time, the change marked the start of a long decline of concepts of human habit and emotion in scholarly and journalistic interpretations of organizational action.

This evolution has affected (among others) the behavioral foundations of Nelson and Winter (1982) and their numerous followers (Lazaric 2000; Vieira da Silva 2001). It has to do with the criticisms that have been recently addressed to these foundations. For instance, Witt (2014, p. 650) criticizes Neo-Schumpeterian economists for having confined their approach of “*individual economic behaviour*” to the “rejection of the fiction of full rationality,” on the

basis of Simon's (1972) hypothesis of bounded rationality. More precisely, Felin (2015) traces back to Simon the propensity of a number of economists to disregard the study of the ways how minds and institutions interact. Similar criticisms have been made in the context of a recent debate that has developed in management and economics literature over how the microfoundations of organizational phenomena, such as routines and capabilities, can be strengthened (Lazarcic 2011). Interestingly, Winter (2013, 2014) has suggested, following Cohen (2007), to turn to John Dewey's theory of habit as a relevant approach to make consistent the individual and organizational levels of analysis. This appeal to link up the Pragmatist theory of habit and the evolutionary literature should fully take notice of the commonalities and discrepancies between the Pragmatist-Veblian and Simonian views on human behavior. We argue that the building of behavioral foundations common to institutional and neo-Schumpeterian evolutionary economics requires to give up the binary vision of human behavior that underlies Simon's approach. This is the condition for neo-Schumpeterian evolutionary economists to take advantage of the most valuable insights of institutional economics regarding the interactions between individual choices and habits and institutions. Symmetrically, it could stimulate a better integration within institutional economics of the neo-Schumpeterian evolutionary insights on the firm behavior, industrial dynamics, technological change and macroeconomics.

Finally, we want to emphasize that the perspective we suggest is consistent with diverse synthesizing attempts that have already been made at the crossroads of institutional and evolutionary economics. It is of course coherent with the Generalized Darwinism project (Hodgson and Knudsen 2010), which rests explicitly on the Pragmatist-Veblian approach of habit. It is also (among others) consistent with the micro-meso-macro framework developed by Dopfer and Potts (2008). As shown elsewhere, Dopfer and Potts' (2008) concept of rule may be interpreted through the lenses of Veblen's theory of habit (Brette and Mehier 2008).

Moreover, arguing for the giving up of a binary vision of human behavior in order to tackle head-on the interactions between choices, habits and institutions is a way of acknowledging the significance of the meso perspective for both institutional and neo-Schumpeterian evolutionary economics.

Conclusion

This paper has intended to add to the growing literature which aims at the convergence between institutional and neo-Schumpeterian evolutionary economics. It has proposed to feed the debate on the definition of common behavioral foundations, by returning to the original views of the main historical inspirations of these two strands of heterodox economic thought. We have shown that Veblen and Simon shared common views regarding the importance of habit-based behavior, the ability of habits to manage the limited cognitive resources of man, the relative inertia of habits, and so on. However, beyond these commonalities, our cross-reading has highlighted a crucial difference between both authors, which relates to the way they link together habit-based and decision-based behaviors. Simon's dual model, which clearly contrasts these two kinds of behaviors is a major departure from Veblen's approach in which they are closely entangled. This difference of approach has crucial methodological implications. Veblen's vision leads to acknowledge that the decisions made by an individual are intrinsically dependent on the set of habits he or she has previously formed, so that the former and the latter cannot be fruitfully analysed independently from one another. On the contrary, Simon's approach led to split the study of economic behavior into two distinct issues; he himself increasingly focused on decision making and problem solving issues. We have come to the conclusion that neo-Schumpeterian evolutionary economics should first and foremost go beyond Simon's dual model of human behavior and build on the Veblenian-

Pragmatist approach of linking up habit and choice. This could both strongly stimulate its reconciliation with institutional economics and meet the criticisms which have been recently addressed to its behavioral foundations.

Notes

¹ The third edition of *Administrative Behavior*, which was published in 1976 consists in two main parts (Simon [1947] 1976). The first part – Chapters I through XI – is identical to the original 1947 edition. The second part contains six additional chapters – Chapters XII through XVII – which supplement the original edition, each of them based on an article Simon published between 1947 and 1976. Every reference made in the current paper to Simon ([1947] 1976) is from the first part. The fourth edition which dates from 1997 has a different structure: commentaries have been appended to each of the chapters of the 1947 edition. We only make a few references to this last edition in the current paper, exclusively to inform Simon’s 1997 views, as they are exposed in the additional commentaries.

² As it is used throughout the paper, the term “institutional economics” primarily refers to the original American institutionalism and its contemporary followers (Rutherford 2011; Hodgson 2004a). The label “neo-Schumpeterian evolutionary economics” encompasses the various fields of evolutionary thinking in economics that have been inspired by Nelson and Winter’s (1982) seminal book. We use the adjective “neo-Schumpeterian” to conform to the current usage, without suggesting that Schumpeter has been the sole major influence of this rich and diverse strand of thought.

³ According to Peirce (1878, p. 291), “[t]he essence of belief is the establishment of a habit, and different beliefs are distinguished by the different modes of action to which they give rise.” James’ theory of habit also intertwines with his theory of inquiry, even if his version of pragmatism differs to some extent from Peirce’s version. See Lawlor (2006) for a comprehensive analysis of these differences, which are interpreted in terms of complementarity rather than opposition.

⁴ Nonetheless, Cohen (2007) emphasizes that Simon’s training at the University of Chicago included a logic course from Rudolph Carnap, which may have played a role in his endorsement of the principles of logical positivism and his commitment to “empiricism.” In this regard, Cohen finds Simon’s references to the

Pragmatist philosopher and psychologist John Dewey in *Administrative Behavior* somewhat ambiguous, as he clearly discards Dewey's fundamental view that fact and value are entangled.

⁵ In their historic addendum, Newell and Simon (1972, pp. 873-889) indeed consider those two authors as pioneers of modern cognitive psychology.

⁶ For readings of Simon's works on rationality along these lines, see the classical papers from Latsis (1976), Mongin (1984) and Langlois (1986).

⁷ For further developments, see Crowther-Heyck (2006).

⁸ Newell and Simon (1972, p. 882) refer to the period 1954-1958 as the "critical years."

⁹ Actually, we can find this very same binary model of human behavior in George Katona's works, which represent the other main founding source to behavioral economics (see Katona 1951, 1968, 1975, 1980).

¹⁰ This question has obvious ontological dimensions. However, considering the magnitude of the subject, we have decided to follow the suggestion of a referee to give up tackling head-on the ontological positions of Veblen and Simon and their relations to different ontologies in economics and philosophy. This should be the subject-matter of a specific paper.

¹¹ A very specific, but important, psychological source to Simon's works deserves here to be mentioned, namely the "levels of aspiration psychology" (see the seminal works of Lewin, Dembo, Festinger, and Sears 1944).

¹² Such an approach has notably proved fruitful in studying energy consumption (Maréchal 2010) and urban transportation behaviors (Brette, Buhler, Lazaric and Maréchal 2014).

References

- Asso, Pier Francesco and Luca Fiorito. "Human Nature and Economic Institutions: Instinct Psychology, Behaviorism, and the Development of American Institutionalism." *Journal of the History of Economic Thought* 26, 4 (2004): 445-477.
- Brette, Olivier. "Thorstein Veblen's Theory of Institutional Change: Beyond Technological Determinism." *European Journal of the History of Economic Thought* 10, 3 (2003): 455-477.
- Brette, Olivier. *Un réexamen de l'économie 'évolutionniste' de Thorstein Veblen. Théorie de la connaissance, comportements humains et dynamique des institutions*. PhD thesis, University of Lyon 2, France, 2004.
- Brette, Olivier. "Expanding the Dialogue between Institutional Economics and Contemporary Evolutionary Economics: Veblen's Methodology as a Framework." *Journal of Economic Issues* 40, 2 (2006): 493-500.
- Brette, Olivier, and Caroline Mehier. "Building on the 'Micro-meso-macro' Evolutionary Framework: The Stakes for the Analysis of Clusters of Innovation." In *Varieties of Capitalism and New Institutional Deals: Regulation, Welfare and the New Economy*, edited by Wolfram Elsner and Hardy Hanappi, pp. 227-250. Cheltenham; Northampton, MA: Edward Elgar, 2008. Reprint in Dopfer, Kurt, and Jason Potts, ed. *The New Evolutionary Economics*. The International Library of Critical Writings in Economics Series, Cheltenham; Northampton: Edward Elgar, 2014, Vol. 2.

- Brette, Olivier, Thomas Buhler, Nathalie Lazaric, and Kevin Maréchal. "Reconsidering the Nature and Effects of Habits in Urban Transportation Behavior." *Journal of Institutional Economics* 10, 3 (2014): 399-426.
- Cohen, Michael D. "Administrative Behavior: Laying the Foundations for Cyert and March." *Organization Science* 18, 3 (2007): 503-506.
- Crowther-Heyck, Hunter. "Herbert Simon and the GSIA: Building an Interdisciplinary Community." *Journal of the History of the Behavioral Sciences* 42, 4 (2006): 311-334.
- Cyert, Richard M., and James G. March. *A Behavioral Theory of the Firm*. Englewood Cliffs, NJ: Prentice-Hall, 1963.
- Daugert, Stanley Matthew. *The Philosophy of Thorstein Veblen*. Columbia University, New York, NY: King's Crown Press, 1950.
- Dopfer, Kurt, and Jason Potts. *The General Theory of Economic Evolution*. New York, NY: Routledge, 2008.
- Dorfman, Joseph. *Thorstein Veblen and his America*. New York, NY: A.M. Kelley, 7th edition, [1934] 1972.
- Dyer, Allan W. "Veblen on Scientific Creativity: The Influence of Charles S. Peirce." *Journal of Economic Issues* 20, 1 (1986): 21-41.
- Edgell, Stephen, and Rick Tilman. "The Intellectual Antecedents of Thorstein Veblen: A Reappraisal." *Journal of Economic Issues* 23, 4 (1989): 1003-1026.
- Felin, Teppo. "A Forum on Minds and Institutions." *Journal of Institutional Economics* 11, 3 (2015): 523-534.
- Griffin, Robert. "What Veblen Owed to Peirce: The Social Theory of Logic." *Journal of Economic Issues* 32, 3 (1998): 733-757.

- Hodgson, Geoffrey M. "On the Evolution of Thorstein Veblen's Evolutionary Economics." *Cambridge Journal of Economics* 22, 4 (1998): 415-431.
- Hodgson, Geoffrey M. *The Evolution of Institutional Economics: Agency, Structure and Darwinism in American Institutionalism*. London; New York, NY: Routledge, 2004a.
- Hodgson, Geoffrey M. "Reclaiming Habit for Institutional Economics." *Journal of Economic Psychology* 25, 4 (2004b): 651-660.
- Hodgson, Geoffrey M. "Choice, Habit and Evolution." *Journal of Evolutionary Economics* 20, 1 (2010): 1-18.
- Hodgson, Geoffrey M. *From Pleasure Machines to Moral Communities*. Chicago, IL; London: The University of Chicago Press, 2013.
- Hodgson, Geoffrey M., and Thorbjørn Knudsen. *Darwin's Conjecture: The Search for General Principles of Social and Economic Evolution*. Chicago, IL; London: The University of Chicago Press, 2010.
- Hodgson, Geoffrey M., and J.W. Stoelhorst. "Introduction to the Special Issue on the Future of Institutional and Evolutionary Economics." *Journal of Institutional Economics* 10, 4 (2014): 513-540.
- James, William. *Textbook of Psychology*. London: MacMillan, 1892.
- Katona, George. *Psychological Analysis of Economic Behavior*. New York, NY: Mc Graw-Hill, 1951.
- Katona, George. "Consumer Behavior: Theory and Findings on Expectations and Aspirations." *American Economic Review* 58 (1968): 19-30.
- Katona, George. *Psychological Economics*. New York, NY: Elsevier, 1975.

- Katona, George. *Essays on Behavioral Economics*. Ann Arbor, MI: University of Michigan Press, 1980.
- Kilpinen, Erkki. "A Positive Correlation Between Rationality and Habituality – What Does it Mean?" *Paper presented at the ISNIE Annual Conference, 22-24 September, Barcelona, Spain, 2005.*
- Langlois, Richard N. "Rationality, Institutions and Explanation." In *Economics as a Process. Essays in the New Institutional Economics*, edited by Richard N. Langlois, pp. 225-255. Cambridge: Cambridge University Press, 1986.
- Latsis, Spiro J. "A Research Program in Economics." In *Method and Appraisal in Economics*, edited by Spiro J. Latsis, pp. 1-41. Cambridge: Cambridge University Press, 1976.
- Lawson, Tony. "Process, Order and Stability in Veblen." *Cambridge Journal of Economics* 39, 4 (2015): 993-1030.
- Lazarcic, Nathalie. "The Role of Routines, Rules and Habits in Collective Learning: Some Epistemological and Ontological Considerations." *European Journal of Economic and Social Systems* 14, 2 (2000): 157-171.
- Lazarcic, Nathalie. "Organizational Routines and Cognition: An Introduction to Empirical and Analytical Contributions." *Journal of Institutional Economics* 7, 2 (2011): 147-156.
- Lawlor, Michael S. "William James's Psychological Pragmatism: Habit, Belief and Purposive Human Behaviour." *Cambridge Journal of Economics* 30, 3 (2006): 321-345.
- Lewin, Shira B. "Economics and Psychology: Lessons For Our Own Day From the Early Twentieth Century." *Journal of Economic Literature*, 34, September (1996): 1293-1323.

- Lewin, Kurt, Tamara Dembo, Leon Festinger, Pauline Snedden Sears. "Levels of Aspiration." In *Personality and the Behavior Disorders*, edited by J. McV. Hunt, pp. 333-378. New York, NY: Ronald Press, 1944.
- March, James G., and Herbert A. Simon. *Organizations*. New York, NY: Wiley, 1958.
- Maréchal, Kevin. "Not Irrational but Habitual: The Importance of 'Behavioural Lock-in' in Energy Consumption." *Ecological Economics* 69, 5 (2010): 1104-1114.
- Mayhew, Anne. "Veblen and the Anthropological Perspective." In *The Founding of Institutional Economics – The Leisure Class and Sovereignty*, edited by Warren J. Samuels, pp. 234-249. London; New York, NY: Routledge, 1998.
- Mongin, Philippe. "Modèle Rationnel ou Modèle Economique de la Rationalité?" *Revue Economique* 1 (1984): 9-63.
- Murphey, Murray G. "Introduction to the Transaction Edition." In *The Instinct of Workmanship and the State of the Industrial Arts*, Thorstein B. Veblen, pp. vii–xlvi. New Brunswick, NJ; London: Transaction Publishers, 1990.
- Nelson, Richard R. "Bringing Institutions into Evolutionary Growth Theory." *Journal of Evolutionary Economics* 12, 1 (2002): 17–28.
- Nelson, Richard R., and Sydney G. Winter. *An Evolutionary Theory of Economic Change*. Cambridge, MA: Harvard University Press, 1982.
- Newell, Allen, and Simon Herbert A. *Human Problem Solving*. Englewood Cliffs, NJ: Prentice-Hall, 1972.
- Peirce, Charles Sanders. "How to Make our Ideas Clear." *Popular Science Monthly* 12 (1878): 286-302.

Rutherford, Malcolm. *The Institutional Movement in American Economics, 1918-1947*.

Cambridge: Cambridge University Press, 2011.

Sent, Esther-Mirjam. "Herbert A. Simon as a Cyborg Scientist." *Perspectives on Science* 8, 4 (2000): 380-406.

Simon, Herbert A. *Administrative Behavior*. New York, NY: Free Press, 3rd edition, [1947] 1976.

Simon, Herbert A. *Administrative Behavior*. New York, NY: Free Press, 4th edition, [1947] 1997.

Simon, Herbert A. "A Behavioral Model of Rational Choice." *Quarterly Journal of Economics* 69, 1 (1955): 99-118.

Simon, Herbert A. "Rational Choice and the Structure of the Environment." *Psychological Review* 63, 2 (1956): 129-138.

Simon, Herbert A. *Models of Man: Social and Rational – Mathematical Essays on Rational Human Behavior in a Social Setting*. New York, NY: Wiley, 1957.

Simon, Herbert A. "Theories of Decision-making in Economics and Behavioral Science." *American Economic Review* 49 (1959): 253-283.

Simon, Herbert A. "Theories of Bounded Rationality." In *Decision and Organization*, edited by C.B. McGuire and Roy Radner, pp. 161-176. Amsterdam: North-Holland Publishing Company, 1972.

Simon, Herbert A. "Rational Decision Making in Business Organizations." *American Economic Review* 69 (1979): 493-513.

Stoelhorst, J.W. "The Future of Evolutionary Economics Is in a Vision From the Past." *Journal of Institutional Economics* 10, 4 (2014): 665-682.

- Tilman, Rick. *The Intellectual Legacy of Thorstein Veblen*. London; Westport, CT: Greenwood Press, 1996.
- Tolman, Edward Chace. *Purposive Behavior in Animals and Men*. New York, NY: The Century Co, 1932.
- Twomey, Paul. "Reviving Veblenian Economic Psychology." *Cambridge Journal of Economics* 22, 4 (1998): 433-448.
- Veblen, Thorstein B. "Kant's Critique of Judgment." In *Essays in our Changing Order*, edited by Leon Ardroni, pp. 175-193. New Brunswick, NJ; London: Transaction Publishers, [1884, 1934] 1998.
- Veblen, Thorstein B. "Why Is Economics Not an Evolutionary Science?" In *The Place of Science in Modern Civilisation and Other Essays*, Thorstein B. Veblen, pp. 56-81. New Brunswick, NJ; London: Transaction Publishers, [1898a, 1919] 1990.
- Veblen, Thorstein B. "The Instinct of Workmanship and the Irsomeness of Labor." In *Essays in our Changing Order*, edited by Leon Ardroni, pp. 78-96. New Brunswick, NJ; London: Transaction Publishers, [1898b, 1934] 1998.
- Veblen, Thorstein B. *The Theory of the Leisure Class. An Economic Study of Institutions*. New York, NY: B.W. Huebsch, [1899] 1922.
- Veblen, Thorstein B. "The Place of Science in Modern Civilisation." In *The Place of Science in Modern Civilisation and Other Essays*, Thorstein B. Veblen, pp. 1-31. New Brunswick, NJ; London: Transaction Publishers, [1906, 1919] 1990.
- Veblen, Thorstein B. "The Evolution of the Scientific Point of View." In *The Place of Science in Modern Civilisation and Other Essays*, Thorstein B. Veblen, pp. 32-55. New Brunswick, NJ; London: Transaction Publishers, [1908, 1919] 1990.

- Veblen, Thorstein B. "The Limitations of Marginal Utility." In *The Place of Science in Modern Civilisation and Other Essays*, Thorstein B. Veblen, pp. 231-251. New Brunswick, NJ; London: Transaction Publishers, [1909, 1919] 1990.
- Veblen, Thorstein B. *The Instinct of Workmanship and the State of the Industrial Arts*. New Brunswick, NJ; London: Transaction Publishers, [1914] 1990.
- Veblen, Thorstein B. *Absentee Ownership and Business Enterprise in Recent Times. The Case of America*. Boston, MA: Beacon Press, [1923] 1967.
- Vieira Da Silva, Victor. *L'hypothèse de rationalité et ses prémises: le défi comportementaliste (une investigation aux frontières de l'économie et de la psychologie)*. PhD thesis, University of Lyon 2, France, 2001.
- Winter, Sidney G. "Habit, Deliberation, and Action: Strengthening the Microfoundations of Routines and Capabilities." *The Academy of Management Perspectives* 27, 2 (2013): 120-137.
- Winter, Sidney G. "The Future of Evolutionary Economics: Can We Break Out of the Beachhead?" *Journal of Institutional Economics* 10, 4 (2014): 613-644.
- Witt, Ulrich. "The Future of Evolutionary Economics: Why the Modalities of Explanation Matter." *Journal of Institutional Economics* 10, 4 (2014): 645-664.