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Waging war against mechanical man.

Frank H. Knight's critique of behavioristic psychology

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Abstract
The major theme of this essay is to explore the rationale of Knight's campaign against the adoption of behaviorism in economics. We also attempt to qualify whether Knight's methodological criticism may somewhat undermine his recently acquired credentials as an institutionalist economist. In so doing we focus our attention in particular, but not exclusively, on his debate with the institutionalist Morris A. Copeland. In the first section we try to explain why behaviorism gained consensus among institutional economists, and we also provide a brief overview of the main behavioristic themes as they were presented in contemporary economic literature. The second section is devoted to Knight's reactions against behaviorism. Our main point here is that Knight's insistence upon the peculiarities of the human subject matter of economics is still worth careful considerations by all those interested in economic methodology. The final section presents a conclusion.

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1. Introduction

Shira B. Lewin [1996] has recently published a detailed reconstruction of the early twentieth century debate over the psychological foundations of economic theory. From her well documented research, we learn that, since the 1920s, behaviorism as a school of thought began to acquire a prominent position in psychology, entering, at the meantime, the domain of other social sciences. As far as economic methodology was concerned, behaviorism promptly gained the attention and support of many leading American institutionalists. With its emphasis on demarcating science (observed behavior) from metaphysics (mental states) and on the empirical testing of behavioral laws, the new approach seemed to provide a powerful analytical and rhetorical weapon against the perceived narrowness of "orthodox" economic theory. With its bias on the practical applicability of scientific knowledge to the prediction and social control of human conduct, behaviorism was viewed as a promising philosophy for those who searched suitable models of inquiry and intervention for the postwar world [Lewin 1996, 1294; 1304-1307].

Among American economists, however, behaviorism soon found its fierce detractors. First, the behaviorist doctrine was attacked by those who saw something distinctive in the study of human behavior. Many found that, if applied to economics, behaviorist explanations were bound to degenerate into a new, and more dangerous, brand of determinism. Critics also disliked the idea that intentional human action – whose origins are presumably objective – could be reduced to testable theories based on observable behavior. It was also remarked that observation was hardly an objective activity, but theory-laden; and that sociological factors rather than empirical verification,

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often determined whether a theory actually comes to be accepted or rejected. Such a wave of criticism was formulated, among others, by Frank H. Knight. In a series of contributions appeared in the 1920s and early 1930s, Knight vigorously undermined the adoption of behavioristic psychology in economics.

The major theme of this essay is to explore the rationale of Knight's campaign against behaviorism and the psychological foundations of human conduct. We also attempt to qualify whether Knight's methodological criticism may somewhat undermine his recently acquired credentials as an institutionalist economist. In so doing we shall focus our attention in particular, but not exclusively, on his debate with the institutionalist Morris A. Copeland.

In the first section we try to explain why behaviorism gained consensus among institutional economists, and we also provide a brief overview of the main behavioristic themes as they were presented in contemporary economic literature. The second section is devoted to Knight's reactions against behaviorism. Our main point here is that Knight's insistence upon the peculiarities of the human subject matter of economics is still worth careful considerations by all those interested in economic methodology. The final section presents a conclusion.

2.1 The 1920s: behaviorism encounters economics

In December 1918, one of the young American dissenters, Walton H. Hamilton, proposed a reformulation of economics along "institutionalist" lines. In a paper delivered at the annual meeting of the American Economic Association – which later became known as the "institutionalist manifesto" [Dorfman 1974, Rutherford 2000a and 2000b, Hodgson 2001] – Hamilton preached for a new economic theory whose relevance was extended to the social problem of control and whose foundations were based upon an acceptable theory of human behavior. In this connection, Hamilton believed that subjective utility was a misleading concept in order to explain economic behaviour and the way it changed in an evolutionary perspective. He resolutely condemned "[t]he extreme individualism, rationality, and utilitarism which animated eighteenth century thought" and which, in his opinion, still found expression in contemporary neoclassical economics. In its stead – he argued – the social scientist ought to formulate a new theory of economic motivations which could find useful inspiration in the most recent achievements of modern social psychology. As Hamilton put it:

> "Where it [neoclassical economics] fails, institutional economics must strive for success. It must find the roots of activity in instinct, impulse, and other qualities of human nature; it must recognize that economy forbids the satisfaction of all instincts and yields a dignified place to reason; it must discern in the variety of institutional situations impinging upon individuals the chief sources of difference in the content of their behavior; and it must take account of the limitations imposed by past activity upon the flexibility with which one can act in future" [Hamilton 1919].

Hamilton's argument for an economics based on modern psychological foundations requires some comments. As noted by Hodgson [2001], when the premises of institutionalism were laid down in the 1890s "modern psychology" strictly coincided with the instinct psychology of W. James, W. McDougall and others. Indeed, this doctrine had exerted a strong influence on early institutionalist thinkers like T. Veblen, R. F. Hoxie, and Carleton Parker, as well as, although in a lesser degree, on some more orthodox figures like F. Taussig, I. Fisher and H. J. Davenport.

Instinct psychology, however, shortly began to decline. Even before 1918 it had come under severe revision both by psychologists and economists alike, the latter denying its usefulness for the study of economic agents and the nature of complex economic activity. Quite interestingly, early critical comments against instict psychology were raised from the institutionalist camp. In 1914, for instance, W. C. Mitchell pointed out some ambiguities in Veblen's definition of the term instinct [Mitchell 1914]; in his 1915 lecture notes Mitchell observed that economic behavior was probably "the most suggestive name of the type of economic theory that we should cultivate," pointing out to the need for the economist to acquaint "the knowledge of human nature which psychology, ethics, history and biology has afforded since Ricardo's time [together with] all the materials put at our disposal by statistics, and all our own wits to understand economic behavior." [Mitchell 1915, 1969][1]. Two years later, in 1917, in his posthumously published *Trade Unionism in the United States*, Hoxie had strongly criticized Veblen's deterministic conception of human nature [Hoxie 1916]; while in 1921, Clarence Ayres attacked the instinct theorists on the grounds that no adequate consideration was attached to the cultural and environmental factors as a contributory cause of human activity and motivations. Ayres' contention can be succinctly summed up by quoting the closing sentence of his 1921 article on instincts and capacity: wondering what was the driving force

[1] In this connection, in 1925 A. B. Wolfe pointed out that "[M]itchell had as early as in 1914 looked to behavioristic psychology as a promising basis for economics as a science of behavior." [Wolfe 1924, 472]. Mitchell's 1915 outline confirms this impression.

that ultimately formed individuals, Ayres stated that "the social scientist has no need of instincts; he has institutions" [Ayres 1918, 565].

Within economics, however, the most devastating attack against instinct psychology is to be found in Knight's 1922 essay on "Ethics and the Economic Interpretation." Speaking of the relevance of instincts the Iowa economist noted that:

> "If instincts are to be scientifically useful, it must be surely possible to get some idea of their number and identity. But there has always been substantially unanimous disagreement on this point. Logically the choice seems to lie between a meaningless single instinct to do things-in-general and the equally meaningless hypothesis of a separate instinct for every possible act" [Knight 1922].

Knight thus drastically rejected the usefulness for economics of any working definition of instincts, pointing out that it would always be possible to find ad hoc justifications for whatever kind of human behavior simply by adding one new instinct to the existing set. "It is not enlightening" – this was Knight's conclusion – "to be told that conduct consists in choosing between possible alternatives." [Knight 1922; see also Copeland 1924][2]. The following year, Knight turned again his attention to instinct psychology in his review of Lionel D. Edie's *Principles of New Economics* [Edie 1922]. Echoing Ayres' criticism, Knight affirmed to be under the impression that "the tendency of the more careful students in this domain [social psychology] is already strongly away from the use of 'instincts' to explain everything in the field of human contact" and observed that "the movement is toward a real 'psychology,' viewing behavior as the expression of conscious attitudes toward values whose content is largely an institutional product." [Knight 1923, 155].

Thus, at the time Hamilton raised his plea for a closer "cross-fertilization" between modern psychology and economic theory, several economists, more or less sympathetic with the institutionalist perspective, had already expressed, or were about to express, skeptical observations about the possibility of building a theory of human agency based on the notion of instinct[3]. It is not

[2] On the relationship between Knight and Ayres see Samuels [1977].

[3] In the early 1920s, among social psychologists, issues related to instinct theory were frequently debated. See, for instance, McDougall [1924] and especially Kantor [1922; 1924]. This latter work had quite an impact on the institutionalist community and particularly on Clarence Ayres. As Rutherford observed, "Kantor's work helps in understanding the nature of the behaviorism adopted by many institutionalists as instinct theory fell out of favor" [Rutherford, forthcoming]. However, to our knowledge, in Copeland's several contributions to economic psychology there is only a passing reference to Kantor and, at least in his case, Watson's works influenced his "conversion" to behaviorism.

surprising that at the beginning of the 1920s, many of them turned their attention to a new approach in psychology, namely behaviorism, that was thought to undermine the validity of the instinct doctrine.

Launched in 1913 by John B. Watson's much celebrated series of lectures at Columbia University on "Psychology as the Behaviorist Views it" [Watson 1913], the new approach shortly gained its momentum throughout American psychology. During the 1920s, the work of a growing number of psychologists led to the emergence of a reasonably coherent set of intellectual commitments to which the name behaviorism gradually became attached [Wozniak 1994]. Its main tenets were the removal of introspection in psychological theory, a dedication to the use of objective methodology in research, and a strong concern for the practical application of psychological knowledge to the prediction and control of behavior. As a consequence, behaviorism soon displaced instinct theory as the "scientific," methodological basis for the construction of an alternative theory of human agency in economics. This circumstance is also confirmed by the large number of references to behaviorism that are to be found during the 1920s in the "heterodox" economic literature[4].

Among the leading institutionalists Rexford G. Tugwell was perhaps the first who hailed his approval on behalf of the new psychological approach. According to Tugwell, the increasing demand for data collection and empirical manipulation of statistical series required a drastic "philosophical" change in the conduct of quantitative methods. Empiricists in the social sciences could not derive their practices from the delicate physical manipulations employed by physical scientists. Instead, they had to content themselves with relatively coarse manipulations having discernable effects on aggregate behavior. In this connection Tugwell wrote that "the devices of the behaviorists have been useful in the sense that we now have the facts which provide a significant nucleus for others and which will grow into a later, more complete, body of truth" [Tugwell 1922, 332]. Moreover, he added, behaviorism was quite instrumental to a new scientific rationale of government intervention, which the new breed of economists "in the public service" was eager to promote in the postwar world. In fact behaviorism was very disturbing "to laissez faire believers precisely because it calls in question what is meant by saying that man pursues his own gain and how it is that he accomplishes in this way the social good he is credited with" [Tugwell 1922, 339].

[4] The victory of behaviorism over alternative psychological methods in the interwar years was recognized by Schumpeter [1954 797-798] who wrote that "American economists have shown more interest in the programmatic pronouncements of behaviorists than they have in any other of the developments in psychology."

Three years later, in his famous presidential address on "Quantitative Analysis in Economic Theory," W. C. Mitchell followed Tugwell's suggestions and embraced enthusiastically behavioristic psychology. While discussing the pros and cons of experimentalism, Mitchell dwelt upon the difficulty of making neutral experiments in the social sciences. Such difficulty seemed to him almost insuperable, as long as economists and social scientists were stuck to the old, unchangeable conceptions of human nature and motivations. Quite to the contrary, he wrote, "the behavioristic concept promises to diminish this handicap under which economics and its sister sciences have labored. For we can try experiments upon group behavior. Indeed we are already trying such experiments" [Mitchell 1925, 8].

Among institutional economists, however, the most outspoken and resolute endorser of behaviorism was undoubtedly Morris A. Copeland. In a series of papers which were published between 1925 and 1931, Copeland attempted to establish strong scientific connections between behaviorism and institutionalism. Such a fruitful alliance, he wrote, was to be grounded on the common concern (common to the institutionalist and the behaviorist) that their formulations shall conform to two important canons: "(1) that they shall be consistent with hypotheses in other fields, especially with the natural-evolutionary hypotheses in geology and general biology; (2) that they shall leave the door open to the solution of all psychological problems by methods of scientific observation and scientific reasoning." [Copeland 1930, 13].

However, within the economics profession, the institutionalists' enthusiasm for the application of the latest conclusions of psychological research in economics did not receive unanimous support. T. N. Carver, for instance, as early as in 1919, warned the readers of the *Quarterly Journal of Economics* against the emergence of a new kind of economic man – the "behavioristic man" – which was the by-product of a related school of though, the so-called "behavioristic school of economists." Such a characterization, he argued in a strongly critical vein, seemed to have no historical specificity, sharing an odd destiny with his neoclassical counterpart. He simply was "the result of an over-emphasis upon the non-pecuniary and the neglect or under-emphasis upon the pecuniary motives, as the old economic man was the result of the opposite tendencies"[5] [Carver 1919, 195]. In the same fashion, in 1925, R. T. Bye commenting on "Some Recent Development in Economic Theory," continued to express his faith in the survival of neoclassical price theory. Quite ironically, Bye remarked that some contemporary critics of traditional economic theory "have become so sanguine over the possibilities of behavioristic psychology that they believe the whole of

[5] It should be noted, however, that Carver did not mention the name of Watson.

current value theory must be thrown upon the scrap heap and a new one constructed upon the study of human behavior. But this would be too much useful work of the past, and is quite unnecessary." [Bye 1924, 277].

If these economists just limited themselves to passing references to behaviorism, both in his published works and in his private correspondence, Frank H. Knight embarked in a personal campaign, against the adoption of behaviorist psychology in economics. The next paragraph briefly reviews the main reasons why some institutional economists adopted a behavioristic perspective with a particular, although not exclusive, focus on M. A. Copeland; in the following section we analyze Knight's reaction to behaviorism.

2.2 Behaviorism in economics: three major themes

Even among the psychologists who identified themselves as behaviorists, agreement on its meaning and scientific usefulness was by no means unanimous [Buckley 1989; Mills 1998; O'Donnell 1985; Wozniak (Ed.) 1994]. In what follows, we make an attempt to define the behaviourist programme or, better, the main common themes as they were presented by those institutional economists who adopted a behavioristic approach to economics. As already remarked, Morris A. Copeland was the economist who, more than anybody else, attempted a systematic treatment of behavioristic psychology. Therefore, his works will be our main source of reference[6]. According to Copeland, the key propositions of behaviorism can be briefly summarized in three statements:

1) *Introspection – internal observation of one's own consciousness – must be rejected because consciousness is not an objective fact to be observed*. Following Watson, some economists protested against all attempts to explain human action by exclusive reference to introspection on the ground that mental states fall beyond the range of physical measurement. Conversely, human behavior was viewed as belonging to the same realm of physics – in its strictly mechanical interpretation – and defined in terms of the organism's "organized" reaction to an antecedent stimulation. In a typical institutionalist fashion, it was argued that economic agents developed new chains of habits from past experiences, which strongly influenced the prospective evolution of economic actions and reactions. Such an argument was best put forward in L. Frank's words. In his

[6] Other references will be made to the works of Lawrence Kelso Frank, a leading exponent of the "new American psychology" and a student of industrial organization. For a brief evaluation of his contributions see Dorfman [1959], V, 497-502.

1924 article on "The emancipation of Economics," which appeared in the *American Economic Review*, Frank wrote:

> "This does not mean that a stimulus (event, person, or thing) 'causes' man's behavior, but rather that each person, from birth onward, develops a set of habits or patterns of behavior by responding to the stimuli of the environment he meets; these habits are 'touched off' whenever the appropriate stimuli appear."

For Frank behaviorist psychology was a rather mechanicistic version of associationist psychology which was organized on experiments through comparisons and conditioned responses:

> "Man's behavior then, like all other phenomena, is a consequent response which follows a specific, antecedent stimulus; but the particular form or manner of the response is a stage in the process of development or evolution of habits, as formed by prior stimuli, or what we call experience. In simplest terms, then, behavior is an event, the occurrence of which is a consequent to an antecedent stimulus; but the character, quality, form, pattern, and so on of that behavior event is a product of past experience or habits." [Frank 1924, 25].

In other words, the social scientist who set himself the task of analyzing the causation of human behavior must be concerned with the only data objectively available, namely the past record of stimuli to the organism and the organism actual response to the external stimulus. In so doing, the economist may be capable to specify the response as a function of the history of stimuli.

As to the rejection of consciousness, it must be noted that Copeland, took a somewhat less radical position. If in the analysis of human behavior – thus his argument ran – consciousness was to be recognized any role, mental states just needed to be reconceptualized in terms of physical processes or to be reconstructed as an epiphenomenal – albeit psychical – byproduct of physical process. Even in these cases, however, consciousness had to be considered as a datum rather than as an explanation or an analytical tool: "Mental states, if not physical, must be mere parallels or duplicates of physical conditions and events" [Copeland 1926, 246].

2) *Intentional, purposive descriptions are highly interpretative, and therefore do not allow intersubjective consensus. Purposive action should always be explained in terms of more basic properties of behavior*. If behavior is to be accounted for only in terms of a more or less mediate

stimulus-response patterns, explanations of human conduct based on "teleological" terms like *motive*, *intent*, *purpose*, *aim*, *desire, urge* and so on, should always be carefully avoided in scientific analysis. Or else they should be reconstructed and reconsidered along the behaviorist perspective. Frank was especially forceful in making this point:

> "It is not difficult to see how the notions of volition and of motives arise and persist, for, if we do not know a person's habits or prior experience, his behavior in any situation can be accounted for only as something willed, the product of a specific motive. It may not be unwarranted to suggest that a motive is a name we give to an undisclosed habit or to the susceptibility to stimuli which has been acquired in past experience. *We may give up the conception of autonomy and the problem of motivation without embarrassment to social science, if we approach the problem of human behavior as a sequence of antecedent stimulus, prior experience, or habits and consequent response*." [Frank 1924, 25: emphasis added; see also Snow 1924].

Even the concept of instinct ought to be discarded in so far as it was conceived in teleological terms, i.e., as an "innate disposition" to attain some natural objectives or as a form of evolutionary association. "Such a *metaphysical* interpretation of organic predispositions" – wrote Adolf Snow[7] – "is unintelligible." [Snow 1924, 492: emphasis added; see also Frank 1924, Copeland 1925; 1926][8].

Copeland's analysis of intentional behavior in a behavioristic perspective deserves special mention. As a behaviorist, Copeland coherently rejected teleological explanations, although he did not deny that behavior shows purposive characteristics – namely, *persistence* and *flexibility*. However, also such characteristics, he maintained, were to be accounted for in non-teleological terms. In order to clarify the issue, Copeland first introduced a semantic distinction between "teleological" and "telic" behavior. The word "telic" was applied to those instances in which "antecedent responses *appear to be* determined by the consequent end;" while the word "teleological" was confined to terms or statements which implied that "consequent *determines* antecedent in telic behavior" [Copeland 1926, 255, both emphasis are ours].

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[7] Adolf J. Snow, psychologist, wrote extensively on the applications of psychology to economics and business. See for example, his *Psychology in Business Relations* [1925] and *Psychology in Personal Selling* [1926].

[8] It is interesting to note that Watson's attitude toward instincts is somewhat ambiguous. While remarking in a critical vein that "no one has as yet succeeded in making even a helpful classification [of instincts]," he nevertheless admits that man at birth and at various periods thereafter is supplied with a series of protective and attack and defense mechanisms [Watson].

Now, according to Copeland, telic behavior can be explained non-teleologically as stimuli that are maintained until they are eliminated by a goal-response. Therefore, behavior shows *persistence* because different goal-responses will continue to be emitted until the inducing stimulus disappears or is substituted by a new one: "[t]he end is the elimination of the inducing stimulus, or perhaps the presentation of a new stimulus which directs attention or awakeness along other lines by inhibiting a new set of reaction-patterns and calling out a different set of responses" [Copeland 1925, 256]. Similarly, behavior shows a certain degree of *flexibility* whenever new goal-responses succeed in eliminating the inducing stimulus: "[t]he evolution of drives is partly a process of adding new reaction patterns to a given drive […], and partly a process of developing inhibitions to one of two mutually conflicting responses when both are called out together […]" [Copeland 1926, 256]. It was on these grounds that Copeland dismissed the idea of rationality and given preferences implied by the neoclassical *homo oeconomicus*: contrary to what is assumed by marginal utility theory, choice does not take place between competing desires, since what is desired may be changing during the choice-process. Choice, as he put it, is rather "a conflict between two reaction-patterns and a process of survival of one of them in the complex" [Copeland 1926, 263].

3) *Behavioral research leads to the discovery of behavioral "laws," and these laws can be tested experimentally. A theory that is confirmed by repeated tests allows prediction and control*. Many commentators [O'Donnell 1985; Smith 1986] have remarked that the behaviorists' emphasis on objective and measurable variables was consistent with the emerging positivist approach. Undoubtedly, with the logical positivists the behaviorists shared the empiricist insistence that claims must be assessed on the basis of observational evidence. Sensory experience – the results of observations and experiments – constituted the ultimate evidence on which to base (or reject) consistent theoretical claims. In this connection, M. A. Copeland made it crystal clear that the social scientist should draw a sharp distinction between appraisals (subjective) and descriptions (objective) of human behavior: "[a]ppraisal of the behavior of an organ as appropriate to the performance of the organ function is not part of the description that makes possible prediction, specification, or control of behavior" [Copeland 1926, 250]. Similarly, L. Frank insisted on the denial of consciousness in order for economics to attain a scientific status: "So long as man's behavior is conceived to be volitional and purposive, it must escape experimental and scientific study, for it is a non-repetitive occurrence and has no antecedent which can be objectively studied" [Frank 1924, 37n].

The idea of an objective, scientific approach to the study of human behavior, which was capable to draw upon the methods of the natural sciences, turned out to be extremely appealing especially to the "quantitative" wing of the institutionalist movement. Terms like *experiment*, *experimental*, *quantitative techniques* and the like became very common in the methodological debates of the 1920s. Again, Mitchell's belligerent 1925 article provides one of the most relevant examples. According to the Columbia economist, realistic studies should not be viewed as subordinate to theoretical work, nor even as complementary. Instead,

> "[i]n collecting and analyzing such experimental data as they can obtain, the quantitative workers will find their finest, but most exacting opportunities for developing statistical techniques – opportunities even finer than are offered by the recurrent phenomena of business cycles. It is conceivable that the tentative experimenting of the present may develop into the most absorbing activity of economists in the future. If that does happen, the reflex influence upon economic theory will be more radical than any we can expect from the quantitative analysis of ordinary behavior records" [Mitchell 1925, 9].

Similar claims about the need of a quantitative-experimental economics were made by Copeland [1924], Mills [1924], Snow [1924], and Tugwell [1924b]. Nevertheless, the nature and definition of what the Columbia economist and his fellows meant by "experimental method" often remained unclear, raising heated debates and controversies over Mitchell's line of thought [Schultz (1937) 2000; Seckler 1975; Fiorito – Samuels 2000].

Finally, as to the issue of social control, it should be noted that in the institutionalist manifesto W. H. Hamilton had listed the pragmatic nature of the "new economics" among its most distinguished features as well as one of the highest research-priorities on the agenda of postwar economic thinking:

> "A shift in problems and a general demand for control has made institutional economics relevant. This shift has been due partly to a discovery that institutions are social arrangements capable of change rather than obstinate natural phenomena, partly to a consciousness that activity, once apparently voluntary, is controlled by subtle conventions and habits of thought, and partly to the bad taste which laissez faire has left with us" [Hamilton 1919].

There seems to be a strong similarity between Hamilton's pragmatic view of institutionalism and the behaviorists' claim that the goal of psychology was to lay down the groundwork for a "behavior technology." In contemporary textbooks on the history of economic doctrines, this new strand of American economic thought began to be classified as the "behaviorist institutionalists."[9]

3.1 Knight's critique of behaviorism

In order to present a coherent analysis of Knight's critique of behaviorism, we must first make an effort to reconstruct his line of thought from the several contributions he made from the early 1920s to the mid 1930s, which mainly dealt with economic methodology, psychology, and ethics. On these issues Knight entertained intense exchanges with Morris A. Copeland and we shall also quote extensively from their unpublished correspondence.

For the sake of simplicity, we have grouped Knight's critique under the same headings which we have previously adopted to define the three major themes of behaviorism.

1) *Consciousness*. Knight's defense of the role of introspection in the analysis of human behavior is inspired by his intellectual debt to such figures as Henry Bergson and Max Weber [Knight 1925a][10]. From the German thinker in particular, Knight took the idea of *Verstehen* – the intuitive understanding of human motivation – which in Weber's opinion is what fundamentally distinguishes the human sciences from the natural sciences [Weber 1922; Lewin 1996, 1298-1299]. Knight started his discussion by affirming that the economist who adopts the scientific – i.e. behavioristic – point of view, reduces the problem of economic behavior to a "parallel" of that of celestial motions. The "desire" which prompts the act of purchasing is thus analogous to the "attractive force" among planets. In this perspective, the idea of consciousness plays no active role, for "[w]hat we really observe in the economic situation is the fact that a good is purchased, just as what we observe in the other case is the fact of movement" [Knight (1925a) 1935c, 83].

However, the adoption of the physical – or, more precisely, *mechanical* – metaphor in the study of economic behavior implied what Knight called the "fundamental difficulty in economic

[9] See, for example, Suranyi Unger [1931], Haney [1936].
[10] See Schweitzer [1975] on the influence of Weber on Knight's work.

psychology"[11]. On the one hand, in fact, mechanics involves a strictly deterministic causality according to which there can be no discrepancy between the driving forces and their effect, since the only source of information available to the observer are the effects themselves[12]. On the other hand, in dealing with human behavior we find two distinct sources of information about desire, and both sources tend to show that such a strict causality does not necessarily hold [Knight (1925a) 1935c, 84; 1925b]. The first source is *introspection*, i.e. the human ability to contemplate one's own desires, a quality which does not find expression in any observable behavior. Through introspection, Knight argued, the individual "has immediate knowledge to the effect that the acts most directly prompted by desire do not exactly express the desires as felt and often diverge grotesquely from them" [Knight (1925a) 1935, 84; 1825b]. The second source of information about desires is *communication* with other human beings: "The knowledge of human desires we get through social intercourse reveals them as divergent in a very considerable degree from the desires which are necessary to explain in the scientific sense the behavior we observe." [Knight (1925a) 1935c, 84; 1925b].

For Knight, the fact that psychologists did not know precisely what consciousness was did not prove its non existence, since even physicists did not know the real nature of force. Therefore, he insisted, the behaviorist was on rather loose grounds since he identified consciousness with physical processes, or whenever he acknowledged some difference between them but tended to exclude the former from the realm of science. Most noteworthy, assumptions (or exclusions) of this kind were untenable, as a simple consideration of *intra* and *inter*personal communication showed. Both forms of communication represented forms of consciousness, not just physical events, and they cast serious doubts on whether human behavior was always mechanically activated by motives as analogues to force.

It must also be noted that Knight attached paramount importance to the role of communication in another connection which is quite different from the behaviorists' attitudes towards the logic of language. While Watson and his followers proposed and attempted to incorporate the major aspects of linguistic behavior within a behavioristic framework, Knight held that our ability to relate to one another through language – but also through shared meanings, traditions, norms – cannot be reduced to the logic of mechanical action patterns. In his view, communication among individuals

[11] Quite interestingly, this point was also raised by Gunnar Myrdal in his 1929 book on the political element in the development of economic theory [Myrdal 1953].
[12] "We 'infer' the force from the effect, and in the nature of the case the force is always exactly what is required to 'explain' the effect observed."

was essentially communication among different states of consciousness: "Peoples are personalities, characters; the biggest part of social relations consists of conversation, the interest residing in feeling and thought communicated and not in behavior and its physical results" [Knight 1925b, 260]. The very logic of language thus becomes purposive and eludes any behavioristic attempt to reduce it to a stimulus-response pattern. Quite interestingly in his attempt to rebut the idea of a language habit, Knight anticipates many of the anti-behavioristic themes on which Noam Chomsky will base his 1959 critique of Skinner's *Verbal Behavior*. As Knight put it in a long passage from which we quote at length:

> "Speech in particular cannot without absurdity be treated as mere physical behavior, and the behavioristic term 'language habit' does grave injustice to the richness and variety of life. The notion of habit is of possible applicability to the utterance of words used in a purely literal sense – if any language outside of mathematical symbols ever is strictly literal, an assertion open to doubt. It will not fit at all the other type of language, which is more important and more common in cultural intercourse, the figurative, suggestive use. Language as an artistic medium must not be confused either with the mere tool of factual communication or with mechanical incitement to action. Actual speech almost always contains a considerable admixture of the first element. No two people talk identically the same language. The great majority of sentences spoken or written express and convey to the hearer or reader ideas to some extent original and unique. How we ever learn to communicate thought and feeling seems profoundly mysterious. Induction by association appears wholly inadequate to explain the result, certainly in a creative genius and his readers. The writer is impelled to believe to some extent in an intuitive 'faculty' of communication and interpretation. Yet our communication is admittedly very imperfect. Two critics get very different impressions from a book or poem; and in social science and philosophy, discussions of fact have a way of transforming themselves into arguments about what somebody really said. Yet communications of new ideas and emotions is a fact, and one which resists mechanistic explanation" [Knight (1925a) 1935c, 90n].

The role of language and social intercourse thus occupies a central place in Knight's defense of *Verstehen*. It is through communication and social intercourse that people infer other people's (and their own) consciousness and recognize it as *real*. This, in turn, begs the question of what Knight meant by *real*. This point will be taken up below.

2) *Analysis of behavior*. Once the role of consciousness is recognized and once the possibility of discrepancy between stimulus and response is allowed for, the idea of a mechanistic interpretation of human behavior breaks down. Stepping from the *Pars Destruens* to the *Pars Construens*, Knight advanced three distinct interpretative "principles" or "levels" for the study of human behavior. As Knight will put it explicitly in his subsequent writings – where he will develop six different categories of human behavior[13] – each of this three "levels" of explanation is necessary when the social scientist approaches the study of human behavior.

First, human action is in part explained by "natural causality" and can accordingly be reduced as much as possible to principles of regularity by statistical inference and other methods: "Within limits," Knight conceded, "it is possible to discover laws of behavior as such, in the objective sense" [Knight /1924) 1935c, 121]. Yet, even in this case, Knight maintained a strong skepticism toward the rhetoric used by those who followed behaviorism. As he wrote in a letter to Copeland:

> "Of course I recognize that behavior is largely mechanical, and that it is vitally important to push the study of it along mechanical lines as far as possible. In this connection, however, I am still skeptical about the 'relevance' of such notions as those of drives, complexes etc. They do not mean the same thing as action-pattern, and even in this latter, the world 'pattern' is ambiguous and dangerous, and ought to give place to the old-fashioned word 'law,' or some new term which would get rid of the flavor of imperativeness which that word unfortunately has. The use of such language is to me a sign of the weakness of the position it is used to defend."[14]

Second, human action may be accounted for by an *intention* or *desire* which is to be considered as an absolute "datum," and thus as a "fact" [Knight (1935a) 1835c]. It is this second level of interpretation which ultimately represents, according to Knight, the proper realm of scientific economics. Economics as a science deals with ideal and not actual behavior – ideal in the sense of "being an objective which the individual does in fact strive to realize" [Knight (1935a) 1935c, 279]. And this idealized form of behavior is ruled by universal laws, which are non institutional in character:

[13] See Hands [1996] for a discussion of Knight's six category taxonomy of human behavior.
[14] Frank H. Knight to Morris A. Copeland: November 9, 1926. Knight Papers, Department of Special Collections, University of Chicago. The whole document is reproduced in the appendix.

> "[T]here is a science of economics, a true and even exact science, which reaches laws as universal as those of mathematics and mechanics. The greatest need for the development of economics as a growing body of thought and practice is an adequate appreciation of the meaning, and the limitations, of this body of accurate premises and rigorously established conclusions" [Knight (1924) 1935c, 135].

D. Wade Hands has correctly observed that Knight adopted a rather narrow "means-end" definition of economics: "[i]n contemporary terminology, Knight characterized economics as the science of instrumental rationality: finding the most efficient way of achieving (often maximizing or minimizing) a given objective (or objective function)." However, Wade Hands also affirms that Knight's use of the term "economic science" for such a kind of theorizing should be interpreted carefully: "it is a type of science, but not a positivistic science […]" [Hands 1996, 201]. In fact, and this is Knight's main point, in spite of the universal nature of the laws which govern human choice the ordinary conditions of economic behavior should be kept sharply separate from the theoretically ideal conditions of mechanics. On closer examination, any supposed analogy between utility maximizing economic agents and Newtonian principles does not rest upon solid foundations:

> "In mechanics, if the forces are not directly accessible, at least the conditions under which they act and the effects are measurable and do repeat themselves accurately from one case to another. In economic behavior the opposite is the case. Under no real circumstances can the behaving subject himself, not to mention any outside observer, ever know even afterwards whether or not he actually performed in such a way as to realize maximum possible total satisfaction; and it is even less possible to repeat the choice experimentally with controlled variations" [Knight (1931a) 1935c, 160].

In several occasions Knight insisted on the pervasiveness of intentional human behavior. What the economist can assume as an ideal condition is merely that individuals *strive* and *endeavor* to act rationally – a *tendency* which approximates the results of rational action. Once, however, uncertainty and the subjective probability of error are allowed to creep into the formal model, human action is placed on a peculiar epistemological basis, which is categorically different from cause and effect in natural sciences. For Knight the existence of uncertainty and error is the mark of human consciousness [McKinney 1977, 1143].

Third, human actions can be explained by an urge to achieve different kinds of values which cannot be reduced entirely to factual desires, because "this urge has no literally describable object" [Knight (1935a) 1935c, 244]. Again, in matters of value judgments, value formation and subjective "rightness," any resort to a mechanical man was of little help for the social scientist. Knight's correspondence with Copeland is particularly illuminating on this specific weakness of behaviorism:

> "I submit that no man, however well-educated or critical, or scientifically biased, can carry on five minutes of ordinary conversation about any topic of human interest connected with human relations, without repeatedly and distinctly recognizing (a) that human actions are largely caused and inevitably interpreted in terms of wishes or desires, in a sense categorically different from mechanical estimation, and (b) *furthermore, that they are similarly caused by and inevitably interpreted in terms of (to a lesser but important degree) value judgment in a sense categorically different from wishes or desires*."[15]

Knight made this point in a more explicit fashion in a later contribution:

> "The role of value judgment in individual motivation constitutes a more serious limitation on the economic view of motivation. One commonly wants to do the 'right' thing, without knowing what it is, in contrast with wanting to do any given thing. In this case the problem in action is to decide upon an end, upon what to want, as well as to achieve one's desire. And 'rightness' has a variety of meanings; we want to be right in a mere conventional meaning and also in several 'real' senses – aesthetically, intellectually, and morally [Knight 1940, 25].

Here, Knight made an important step forward in his critique of the mechanical interpretation of human nature. Not only is it impossible to account for intentional behavior without making reference to internal mental states, but also it is impossible to "explore" these mental states without making reference to the set of the individual's values according to which he decides what is right, what is good, and what he wants. To put it differently, for Knight, while the selection of means to given ends can be assessed in terms of its instrumental rationality, since it is possible to discriminate *scientifically* between adequate and inadequate means, such a notion of rationality does not apply to "value-seeking" or "value defining" behavior.

It seems to us, that here Knight is referring to the kind of behavior that Weber has defined as "value rational" (*wertrational*), that is an action which is "determined by a conscious belief in the value for its own sake of some ethical, aesthetic, religious, or other form of behavior, independently of its prospects for success […]." According to Weber, examples of pure value-rational actions would be "the actions of persons who, regardless of possible costs to themselves, act to put into practice their convictions of what seems to them to be required by duty, honor, the pursuit of beauty, a religious call, personal loyalty, or the importance of some 'cause' no matter in what it consists." In Weber's terminology, a value-rational bias "always involves 'commands' or 'demands' which, in the actor's opinion, are binding" [Weber 1968, 25]. Value rational action, therefore, is characterized by the striving for some substantive goal, which in itself may not be rational, but which is nonetheless pursued with rational means.

Also in his entry "Value and Price" for the *Encyclopaedia of the Social Sciences*, Knight devoted few passages to emphasize the role of values in economic behavior. Values, he argued, enter the realm of economic behavior in two different ways. First, he insisted on the fact that "what is chosen in an economic transaction is generally wanted as a means to something else" – a point reminiscent of Dewey's denial of the means–ends dychotomy [Hodgson 2001] – and this in turn implies "a judgment that is a means to the result in question." Second, he warned, "what is ultimately wanted for its own sake can rarely, if ever, finally be described in terms of physical configuration, but must be defined in relation to a universe of meanings and values" [Knight (1935a) 1935c, 246-247]. From this perspective, the main deliberative problem implied by human action was the evaluation of the "ends" that scientific economics must necessarily take as granted. Values, as we would say in modern jargon, provide a metapreference ranking according to which the individual can evaluate, and give meaning to, "factual desires."

3) *Verification, Prediction and Control*. As we have previously remarked, under the influence of logical positivism, behaviorists held that scientific theorizing had a twofold purpose: i) to develop through objective observation a reasonably real picture of the world, amenable to empirical testing; and ii) to gain some measure of control over the course of events which occur in the real world. Knight harshly criticized such a position. First he rejected the possibility of demarcating observation from inference. Every observation – even the most objective observation – is filtered and shaped by the individual's consciousness, for "we cannot perceive the objects themselves as real […] without reading our own experience into them" [Knight (1925a) 1935c, 93]. Accordingly,

[15] Frank H. Knight to Morris A. Copeland: January 25, 1927, emphasis added. Knight Papers, Department of

as Knight put it, not only observations are theory laden, but they are also laden with what the behaviorists have discarded as metaphysics. Every scientific observer has his own way of seeing the world, which is in part based on his background interests and purposes, and in part influenced by his social intercourse with other individuals. Moreover, like every other individual, the social scientist at work is equipped with a very unstable set of preferences, and the behaviorists provided no exception to this rule. Observation thus becomes an act characterized by deeprooted historical and human specificity:

> "Thus observation itself, understood in anything approaching its scientific meaning, is a power socially developed and trained in the individual, and produced in the course of history by the accumulation of communicated and compared experience. Only in this way do we learn even to see with anything like accuracy. And always we see largely what we expect to see, what fits into our organized knowledge of the world. And the structure of our thinking is notoriously that of our language, our medium of communication" [Knight (1925a) 1935c, 96; 1925b].[16]

This, in turn, opened up a more fundamental implication. If every observation involved a certain degree of inference, there was no such a thing as an external physical reality – itself independent of men's consciousness – but a never-ending construction (and reconstruction) of "reality" through social interchange. Accordingly, Knight defined "reality" as

> "the sum of the factors which condition purposive activity, including purposive thought, which must not be conceived of as always standing in an incidental relation to behavior. The freeing of thought from emotion and metaphysical entities would mean its annihilation. It is impossible to perceive or imagine the real world without recognizing the equally real character both of purposes and of intellectual concepts. Thought is impossible without these non-factual data." [Knight (1925a) 1935c, 95].

Thus, the behaviorist assertions that only the external world is real, that the world consists exclusively of material entities and their interactions, and that experience can be reduced to mere

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Special Collections, University of Chicago. The letter is reproduced in the Appendix.

[16] "The common identification of 'observed fact' with 'sense data' is manifestly a confusion. The perception of an object rests upon ages of mental sophistication. Moreover, as we have previously remarked, no observation in the true sense is quite compulsory and unavoidable; no objectification will stand up under hard skeptical scrutiny; even perception of reality is more or less a voluntary act. Thought is saturated with purpose and concepts, emotion and metaphysical entities." [Knight (1924) 1935c, 96-97n].

sense perception, were all rejected by Knight as meaningless, once consciousness was allowed to enter the scene.

The next step for Knight was to advance what may be called a "consensus" theory of verification. Verification was not a matter of analysis of objective data and experimental testing. "True" knowledge was developed by means of critical comparisons and mutual communication; it became accepted on the basis of agreement among the members of the community of inquirers:

> "[T]he test for distinguishing 'real' observation from imaginary is the possibility of verification, which means comparison with the communicated observations of other persons. Observation in the scientific sense is therefore restricted to the limits of possible communication; and nothing very far from the common experience of the race, accumulated and organized into concepts and symbolized by speech forms, could be observed even if it existed. There is no such a thing as either immediate or positive knowledge, it is all a matter of the relative cogency of reasons, or usefulness of believing one thing as compared with another. Scientific truth is a critical rather than a logical category." [Knight (1925a) 1935c, 97].

Whenever one wondered how the ultimate test of truth could be established, Knight admitted that no abstract principle, however convenient it was, could be fruitfully applied. Again in this instance, the soundest criterion was found to rest upon "simply the requirements of intelligent discussion and final agreement" [Knight 1925b, 251]. Thus, while it remained certainly true that the possibility of securing agreement was an absolutely essential feature of the scientific criterion of truth, Knight believed that

> "truth is not merely what is the same for all, but is what is known and recognized as the same. Exponents of the scientific logic commonly take this process of demonstration or verification for granted in an unpardonably uncritical fashion" [Knight 1925b, 253].

Finally, when dealing with "control," Knight rejected one more time the mechanistic interpretation of human nature. While the behaviorists stressed the relevance of behavioral mechanisms as an instrument for social control, Knight emphasized the role of persuasion through communication. To Knight, control appeared to be more a matter of "art" than of mechanical technique: "Art, after all, is 'expression' – of ideas and emotions; and the potency in human relations of sympathy, anger,

personal force, and feeling attitudes generally, is not to be gainsaid" [Knight (1925a) 1935c, 90-91]. Thus, Knight concluded that any attempt to influence or manipulate society through the laws of response to stimuli, although correct from a "scientific" point of view, was doomed to be ineffective:

> "The man who expects to influence others must work more through their feelings and his own than through explicit physical stimulus and response. The interpretation of human conduct in terms of 'behavior patterns,' inherited or acquired, in relation to 'situations' may be metaphysically correct, but it will not work" [Knight (1925a) 1935c, 90].

Thus, his main critical point was that when dealing with human beings, as opposed to inanimate physical objects, the social scientist cannot adopt the categories of positivism. If there is to be any "objective" social science, it must be built upon the kind of objectivity which human behavior and procedures of action actually possess. Such an objectivity, Knight argued, is fundamentally different from the one that belongs to the world of physical phenomena. As he wrote in a caustic review-article of Slichter's *Modern Economic Society*, the notion of uniformity of sequence is antithetical to that of control "by the behaving material himself." Although, Knight admitted that in social and economic phenomena there is "considerable uniformity of sequence", such a uniformity "runs in terms of meanings and values rather than physically described events" [Knight 1932, 440].

3.3 Epilogue

Knight's criticism of behaviorism triggered the reaction of Morris A. Copeland, although, it should be noted, in his articles Knight had never referred to the latter's contributions. Copeland contested Knight's characterization of behaviorism as an attempt to apply the methods of mechanics to the study of human behavior. Rather than at mechanics, he wrote, the behaviorist and the institutionalist looked at biology as a model for scientific inquiry, and they accordingly "employ concepts and (statistical) methods appropriate to classes of which the individual members differ from one another, to species that originate and evolve" [Copeland 1925, 147].

As to the problem of the psychological foundations of economics, Copeland insisted that under the pressure of the new developments in psychology, economic theory needed to be transformed so that it could deal directly with objective behavior rather than making deductive inferences from the

needs and feelings of fictional individuals. Instead of accepting Knight "mystical attitude" toward human desires and purposes – this was Copeland's conclusion – "perhaps we may still proceed on the assumption that psychology and social science will be able by improvement of statistical and laboratory technique, by a more exhaustive collection of data, by better definition of terms and formulation of problems, and by accurate reasoning, *to render a scientific account of purposes and values.*" [Copeland 1925, 151: emphasis added].

In spite of his well known predilection for academic debates, Knight did not publish any rejoinder and limited his reaction to a series of letters to Copeland, two of which, as already mentioned, are reprinted in the Appendix of this article. In his correspondence Knight took issue on the alleged parallelism between force in mechanics and desire in economics, maintaining, rather provocatively, that even in botanic the idea of intentional behavior seemed somewhat inescapable: " I do not believe we can finally 'talk sense' about even plant life without recognizing some degree and kind of purposiveness in it. The term 'struggle' for existence points that way." Even more significant was to Knight the point that behaviorism, in limiting psychology to observations of individuals other than the observing scientist himself, excluded any introspection of the scientist's own internal activities. In his letter to Copeland of November 9 1926, he argued that behaviorists were unable, in terms of their own theory, to account for their own activity as researchers. For instance, any attempt to explain why an author was actually writing a scientific article, would lead to an infinite logical regress:

> "My point, which I tried to make in two articles which you took as a test for the reply, whether you thought them of it or not, is simply that whether anything else in human activity and experience is purposive or automatic, we *cannot* escape the fact that *arguing* about the question itself is purposive! If you try to work out a drive or action-pattern which will "explain" your writing the article at all, and writing one leading to this particular conclusion instead of some other, you will only set yourself (*if* you succeed) the new question of working out an action-pattern to explain why you did that, and so on without end. In the intellectual life itself (if not elsewhere) you cannot get away from real interests, which look forward and not backward for their explanation. This tendency to place the investigation, inquiry or argument itself outside the universe of discourse, is very interesting to me. But the fact remains that inquiry and argument are *also behavior*, and their characteristics have to be taken account of in any discussion of behavior which pretends to completeness. The next step, of course, is that you cannot finally maintain that intellectual inquiry is categorically

> discontinuous with other human interests and behavior — but I don't want to get off on that phase of it now."[17]

Interestingly, Knight turned again his critical attention to behaviorism in two important essays which were published at the beginning of the 1940s. This time, however, he did it in a quite different context. In the first contribution [Knight 1940] – a caustic review of T. W. Hutchison's *The Significance and Basic Postulates of Economic Theory* – Knight reacted against the explicit introduction of Popper's methodological criterion of falsification into economics. Knight's argument is familiar to modern readers. Falsification was a procedure used in science to test the validity of a hypothesis or a theory. Being unrestricted, scientific theories cannot be verified by any possible accumulation of observational evidence. Thus, a scientific test must consist in a persevering search for negative, falsifying instances. If a hypothesis survives despite the continuous and serious attempts to *falsify* it, then it has "proved its mettle," it can be provisionally accepted, even though it can never be established conclusively.

In this review Knight reiterated all his main criticisms against behaviorist psychology. First he ridiculed the positivist idea that proper knowledge of people's mental states could be inferred from the observation of their behavior. His defense of introspection was still based upon "the social-mental, inter-communicative character" of all human thinking [Knight 1940, 15]. On the empirical side, Knight insisted on the impossibility to distinguish observation from inference and reaffirmed that "testing observations is chiefly, and always ultimately, a social activity or phenomenon" [Knight 1940, 7]. Again, in another passage of the same review-article, Knight insisted on his conception of science as a linguistic community and explicitly introduced competence and authority as social requisites to attain a high status among scientists:

> "Moreover, a consensus regarding truth is itself by no means a 'mere' (undisputed) fact. It rests upon value judgment as to both the competence and the moral reliability of observers and reporters. (It is not a matter of majority vote!) Without a sense of honor (as well as special competence) among scientists – if, say, they were all charlatans – there could be no science" [Knight 1940, 7-8]

Knight's second contribution was a critique of the "Slutsky's school" in demand theory [Knight 1944]. Quite ironically, Knight pointed out that what in the 1920s seemed to be a powerful weapon

[17] Frank H. Knight to Morris A. Copeland: November 9, 1926. Knight Papers, Department of Special

in the hands of institutionalists, after only two decades behaviorism had became an appealing and sound psychological doctrine also for "orthodox" economists. In fact, as it has been noted by S. Lewin, starting from the mid-1930s a behaviorist mainstream economics began to emerge, based on the contributions of Eugene Slutsky [1915], John Hicks and Roy Allen [1934], and Paul Samuelson [1938].

Leaving out of this paper any detailed discussion of the so called "ordinalist" turn and disregarding all substantial differences among the authors who were responsible for it, we can follow F. Knight in saying that the new approach to demand theory presented two distinct features. The first was the substitution of the traditional conception of diminishing marginal utility of a single good, for a diminishing "coefficient of substitution" of one good for another. Such a coefficient was intended to be a "purely *behavioristic* principle, or at least purely relative" [Knight 1944, 289; emphasis added]. The second meant the adoption of an "ordinalist" conception of utility, according to which the individual is still considered as a maximizing agent but "this something maximized need not, and therefore should not, be treated as a quantity in the ordinary 'cardinal' meaning, but as only 'ordinal,' that is, utilities are subject to ranking but not to real quantification […]" [Knight 1944, 290]. This is not the proper place to dwell upon the more analytical aspects of Knight's critique of the Slutsky school. However, what is relevant to our discussion is the fact that Knight's attack to the ordinalist's self-denial of psychological commitments echoed his critique of the institutionalists' endorsement of behaviorism. Significantly, Knight turned again his attention to the adoption of the physical metaphor in economic theory, warning that the realism of such theorizing would be "severely limited because the heart of the phenomena in the human case is uncertainty, error, and speculation (with some analogy to mental inertia!) in the thinking by which economic behavior is controlled, and these are not considered to be present in mechanical processes" [Knight 1944, 310].

With the advent of the 1940s and 1950s Knight's campaign against behaviorism faded away, but not his opposition to the rising positivist tide in economics. Nevertheless, even in his later writings, it is not difficult to find Knight reminding his readers that "much that is currently published in psychology and sociology advocates or rests upon the absurdity of behaviorism." [Knight 1956 ,396].

4 Conclusions

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Phillip Mirowski and D. Wade Hands [1998, 270] have observed that Frank Knight "rarely made any argument elegantly or systematically,"[18] and, we add, this may in part explain why we find many different interpretations of his thought. Among these, two in particular are relevant in connection with what we have been discussing so far. The first is provided by Jack Amariglio [1990] in his attempt to trace the historical roots of modernism in economics. Relying exclusively on Knight's *Risk, Uncertainty and Profit* [1921] and focusing on his treatment of uncertainty, Amariglio ranks Knight among the forerunners of modernism. This point is made rather categorically:

> "That Knight was a modernist should not be doubted. The first chapter of his text contains one of the more careful discussions before Robbins of 'scientific' epistemological and methodological procedures. […] Knight clearly enunciated his belief that the method of economics 'is the scientific method' […The] *constant comparison and recourse to physics throughout his text suggests his fascination – with reservations – with modernist conception of knowledge*" [Amariglio 1990, 28: emphasis added].

A quite different reading has been recently offered by Geoff Hodgson who has presented a reconsideration of Knight's economic thought along "institutionalist" perspectives. Hodgson observes that, despite substantial differences in approach, there are important points of convergence between Knight and the institutionalists. These are mostly deeprooted in their common criticisms of neoclassical economics and its methodological apparatus. Knight was in fact critical of the neoclassical assumptions that treated man as an isolate rational economic actor equipped with given preferences, although he believed they had a considerable heuristic and ethical value. In Hodgson's own words:

> "Not only was Knight an institutionalist, he was one of the greatest of all institutional economists after Veblen. He differed from mainstream American institutionalism on key points, but he brought to that tradition great insight and rigour. Without reaching a complete solution to the most fundamental and pressing methodological and theoretical problems, he developed an innovative type of economics which, today at least, is far from the mainstream. He grappled with central problems such as the problem of agency and structure. Inspired by Veblen, Weber, and the German historical school, he engaged likewise with the problem of

[18] Similarly, Hammond observes: "[Knight] was not always a model of consistency, straightforwardness, and clarity, especially so since his style was something of a free-form response to other people's texts" [Hammond 1991, 361].

historical specificity in economic theory. He thus addressed two of the most pressing theoretical problems for a revised institutional economics today" [Hodgson 2001].

We believe that our reconstruction of Knight's critique to behavioristic psychology qualifies both Amariglio's and Hodgson's interpretations of Knight's economic methodology. As to Amariglio, the above discussion may lead to reconsider his claim about Knight being a precursor of modernism in economics. In fact, central to Knight's critique of behaviorism was the recognition that human conduct involves communication among individuals and that we cannot conceive communication without recognizing that human beings are purposeful actors. In particular, Knight saw language as a social artifact involving deliberative effort from the individuals, and therefore not explainable in terms of mere stimulus-response patterns. As to the more specific problem related to the conduct of economic analysis, Knight maintained, although with some qualifications, that economics (and social science in general) is a sociological as well as an epistemological phenomenon. Economics gains a scientific status in so far as it studies ideal behavior, ideal in the sense that agents are supposed to make an effort to behave rationally [Emmett 1994]. But economics is also a "language community." Scientists influence each other and build their own reputation through persuasion and intelligent communication, and it is "consensus" among scientists, rather than the search for empirical verification or falsification, which constitutes the proper test for judging scientific statements. Knigth's critique of Hutchison's attempt to introduce falsificationism in economics, along with his rejection of the behaviorist distinction between observation and inference, set a clear distance between him and the modernist tradition.

On the same ground, Knight contested the modernist claim that, as a natural science, economics was committed to increasing scientific understanding of behavioral mechanisms for the purpose of prediction and control. In Knight's typical style: "Surely the man who would undertake to treat human society merely as material for scientific manipulation, to control it by finding the laws of its response to stimuli and devising stimuli to provoke the responses he might desire, would have to be classed as a monster or as an imbecile" [Knight 1925, 89]. For Knight control was a matter of "art" and persuasion rather than "technique."

As to Hodgson's interpretation, our reconstruction of Knight's controversy with the followers of behaviorism provides some qualifications on his alleged relationship with the institutionalists. On the one hand, it is certainly true that Knight shared with the institutionalists some awareness of the intrinsic limitations of marginal utility economics [Emmett 1984, Fiorito forthcoming]. As he

recollected in a letter of personal reminiscences, he regretted that many of the institutionalist research projects had lost their popularity, particularly within the younger generation of American economists:

> "Above everything else I'd be interested in the history of economic institutions, particularly the *early history* ("origins") or *turning points*, and I imagine that in the concrete this is a matter of legal history, or business practice amounting to unwritten laws. And among institutions, I suppose "property" and the "corporation" (American sense) are of most general interest and importance. Of course the two branches overlap. Now, who is there, particularly among the younger men, but not at all excluding any because of age, who is, or are, carrying on the ideas of Commons (in particular, in this immediate connection) and/or the Germans (Weber, Sombart et al)"[19].

On the other hand, Knight parted company with the institutionalists whenever he perceived in it an attempt to substitute the traditional *homo oeconomicus* with too weak an ontology of the social being as a subject deprived of all autonomy of decision and purposeful action. Alike institutional economists, Knight recognized the tension between the purposeful and constructing role of individual agents and the conditioning influence of the structure of society; however, unlike the institutionalists (such as Copeland) or the neoclassicists, Knight rejected the mechanistic view of human nature which the behaviorists advanced as a proper remedy for such a tension.

Whether or not, and to what extent, Knight succeeded to find a solution to the problem of agency and structure is a matter that goes well beyond the scope of this essay. However, his critique to behaviorism shows how much he was aware that any attempt to escape the reductionism of individual methodology and rationality must likewise elude the behavioristic determinism of mechanical man according to which the individual is just an automaton governed by his outer environment. At the same time, it should be added, Knight's firm anti-behaviorism faces at least one fundamental problem. Insisting on the idea that behavior springs from human intention alone and it is not determined by antecedent conditions, Knight advanced the view of human action as an "uncaused cause." As incidentally noted by Copeland in his polemical exchange – and recently reaffirmed by Hodgson in a more explicit and systematic fashion – the concept of an uncaused cause severely limits the possibility of the construction of an authentic institutional economics. In this manner, in fact, institutions are seen exclusively as a constraint to – or as a result of –

intentional human action, while the impact of institutions on shaping and influencing human motivations is deliberately left out of the picture [Hodgson 1999, 2001].

[19] F. H. Knight to I. L. Sharfman and J. M. Clark: Chicago, October 27, 1949. J. M. Clark Papers, Rare Book and Manuscript Library, Columbia University.

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