

# Time as a milestone in economic thought

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## Abstract:

This paper presents a classification of economic thought based on the perception of time of its authors that seems to draw a methodological anarchism. It uses the traditional distinction between discontinuism – continuism of time; but distinguishes between discontinuity in the form of a constant breaking of time or discontinuity in the form of a foreseeable breaking of time; and between continuism based on the past (conservatism), continuism based on the present (creative present or non-utilitarianism), and continuism based on the future (utilitarian progressism). Finally, the author tries to seek some reality underlying all those rhetorical images.

**Keywords:** Time in economics, methodology of economics, progress in economics, utilitarianism

## Resumen:

Este artículo presenta una clasificación del pensamiento económico basado en la percepción del tiempo de sus autores que inicialmente parece se prueba de la existencia de un “anarquismo metodológico”.

El artículo usa la distinción tradicional entre discontinuismo-continuismo del

tiempo; pero distingue entre discontinuidad en forma de ruptura constante del tiempo o discontinuidad en forma de ruptura previsible del tiempo; y entre continuidad basada en el pasado (conservadurismo), continuidad basada en el presente (presente creativo o no utilitarista) y continuidad basada en el futuro (utilitarismo progresista). Finalmente, el autor intenta buscar la realidad que subyace a todas esas imágenes retóricas, alejándose de la hipótesis inicial del anarquismo metodológica.

**Palabras clave:** Tiempo en la economía, metodología de la economía, progreso en la economía, utilitarismo

## 1. Introduction

Pantaleoni (1904, 4) compared scientific progress to the increasing size of a snowball, rolling down a mountain slope, gathering more snow. Conversely, with their thesis of incommensurability, Kuhn and Feyerabend rejected this linear conception of scientific development, which supposes growth by accumulation, without conflicts or revolutions. Scientific progress, Kuhn says, evolves through periods of “normal science” alternating with periods of “revolutionary science”. Normal science is a conservative enterprise that Kuhn characterised as an activity of puzzle resolution; it only enters into a revolutionary period when a promising alternative paradigm emerges. This is not to say that both paradigms are compared with the results of observation. That comparison could only be made if we could use a language independent of the paradigms in which we register the results of the observations. The change of paradigm is similar to a change of Gestalt. Given a particular problem, the language used within two different paradigms can lead to a divergence between the type of answers that are considered acceptable.

However, as Moulines and Laudan said, and contrary to what Kuhn suggested, there comes a time when the coexistence of rival research traditions is the rule, not the exception (Díez & Moulines 1997, 30-47). Scientific traditions are not “dominant”; they do not impose themselves over different periods of time. In particular, in social sciences, ghettos and “heterodox theories” have been created. Since they do not share the same assumptions and hypotheses, they become isolated from each other. Besides, theories contain elements that deter-

mine the contents of experience, and defenders of different theories live in different experimental worlds (Whewell 1847). Scientists invariably interpret the experimental discoveries with the aid of some theory (Duhem 1962, 32)<sup>1</sup>.

In this apparent methodological anarchism, in economics – and, probably in other sciences – theorists suffer from a suspicion that mainstream science uses methods of persuasion, supported by Power – be it political, economical or mediatic – to eliminate all elements critical of the dominant paradigm as a whole; or, even worse, it translates the criticisms into an orthodox language, deleting them as a solvent of orthodox rhetoric<sup>2</sup>. As Lakatos told us, Kuhn’s theory indeed implies that scientific truth depends on Power (Lakatos & Musgrave 1970, 205). Friedman or Stigler (1950, 392) already said that the success of theories is measured in terms of their acceptance by the most important economists<sup>3</sup>. In this sense, Nietzsche (2003) and Foucault (2007) conception of genealogy and the archeological method questions the emergence of philosophical and social beliefs and looks beyond the ideologies in question for the conditions of their possibility within current power relations.

However, if we put it into words the intertheory differences we could reduce this suspicion. The person who consents to put even his will for power into words is accepting beforehand a certain equality with his interlocutor and, in that sense, he begins to move away from conflict, since conflict is exercised against “what makes us different from the other”, while language discovers “the same as the other” (Savater

1 Furthermore, we cannot forget that hypotheses are collections of enunciations the truth of which cannot be empirically determined. Campbell referred to the second collection of enunciations belonging to a theory, calling it a dictionary for hypothesis. The enunciations of the dictionary relate the terms of the hypothesis to the enunciations whose empirical truth can be determined. But the theorist’s imagination is only restricted by the requisites of internal consistency and deductibility of experimental laws. Once formulated, the test for the success of a theory is its fertility as a creator of new correlations (Campbell 1957, 122). In an influential essay, Rudolf Carnap (1995) restored Campbells’ conception of scientific theories as the “hypothesis-plus-dictionary”.

2 For an interesting book on new directions and criticisms of economic methodology, see Backhouse (1994).

3 Stigler considered that changes in theories do not necessarily imply a conceptual progress, judged in retrospect. The criteria for the acceptance of scientific theories, according to him, are generality, manageability and congruence with casual observance. For an interesting recent book on different visions of progress in economic science, see Boehm et.al. (2002).

1995, 37).

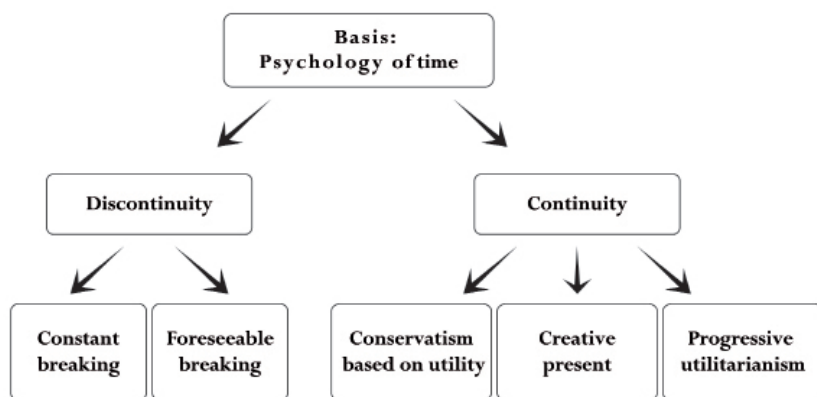
With that purpose in mind, we intend to propose a classification of economic thought – and in consequence philosophical or social thought as well – which is more inclusive than that of *Pantaleoni*'s style. Our objective is to demonstrate the mental fertility of the proposed classification. A classification is more natural if the concepts that it constitutes are more fertile scientifically (Mosterin 1984, 18). To formalize a family of connected concepts is a way of making their meaning explicit (Suppes 1988). Nevertheless, the fact that there exist a theories framework and a family similitude does not mean that science consists only of academic divisions. The construction of theoretical frameworks based on individual theories is related to the problem of the interpreting scientific works, to bring to the forefront and identify the underlying abstract structures. Theories not only reduce one into another, they also approach each other (Moulines 1982, 53-60) and if there exists at least one extension of overlapping and shared criteria, it is possible to compare alternative theories (Suppe 1974, 211). As Feyerabend (1970) told us, to promote scientific progress the scientific community must be able to understand and compare many totally different theories. The competition between theories is in itself creative, enriching our comprehension of the world.

## 2. Proposed classification

Our proposal is based on an element traditionally used as a classifier: Time. If, as Mc Closkey (1994) says, economy is a form of rhetoric, the psychological personal experience of time used by “rhetoricians” determines the images they seek to persuade with and the ones they find most suggestive. This description not only consists of a description of phenomena (Husserl 1990) neither on a hermeneutic interpretation capable of a form of scientific positivity (Heidegger 1996). Not only do we need to describe reality so as to narrate, but also to produce meaning through the reconstruction of the plot and the emergence of different connotations. Then, we interpret human action - and history - as a self-explained text and reality as able to be grasped in the present by the individuals (Zubiri 1998). The temporal character of human experience is emphasized in this case (Ricoeur 1983); and we can even go so far as to include not only memory but

also oblivion, as a way of resistance (Vovelle 1985), and intention or concentration as a way of recollecting true-life experiences. Then, we may distinguish between historical or ontological time independent of any human activity and epistemic or logical time. If there is such a difference, then, for the second kind of time to be relevant we need that it tries to represent the first one in the best way possible (as some Keynesians will put it, Madsen 2012).

In particular, we are going to use the traditional distinction between continuism – discontinuism of time, a dichotomy that is more fruitful than the starting points habitually used (see the graphic).



As a whole, we can say that the common idea of theories based on time discontinuity is that they consider that man arrives and sets out from a social and psychological void. The discontinuity, contrary to what is usually accepted, is a very socially influential time perception, given the inherent human desire to break from life's normal course.

Discontinuity can be illustrated in the form of a constant breaking of time, as is the case in some anarchist doctrines. This is what it has been called the “antieconomy”, in which, to destroy any human hierarchy, given that for all growing creatures one part of the group must be superior to the other, the fear of authority leads their proponents

to prefer the constant breaking of history – and, in some occasions, of human development – in order not to let the hierarchical constructions crystallise (in some sense, that is the case with Proudhon, Bakunin or Kropotkin’s theories that defend the adaptive small groups more than any other social construction.

Another means of discontinuity is the foreseeable breaking of time. This is the case with the catastrophic crises theories or with Marxian theory. In this theory, a destructive embryo, Capital, grows slowly until the shell and the system’s own equilibrium is expected to be broken. As Marx says:

“If money, according to Augier “comes into the world with a congenital blood-stain on one cheek”, capital comes dripping from head to foot, from every pore, with blood and dirt” (Marx, 1992)<sup>4</sup>.

A process of catharsis follows this unavoidable destruction. If from the ashes emerges a fabulous bird, it is an optimistic theory. If this superstitious magic does not occur, and the ashes remain ashes, it augurs dreadful pains.

If discontinuism appears and sets out from the social or psychological void – either in a repeated way or in a foreseeable and sudden way -, continuity, on the contrary, always sets out from an antecedent “existence”.

In this case, we pose a distinction between three branches: the first based on the past, the second based on the present, and third based on the future. Specifically, we have named each branch, first, conservatism based on utility; second, creative present (non utilitarianism); and, third, utilitarian progressism. The systems based on utility are finalist, that is to say, they consider that human action has an aim. In conservatism theories, the objective is survival: the death instinct and the anxiety it creates instigates human action. In the progressist case, man seeks an image of the consequences of action over pleasure. In both cases, man is acting in order to seek an image of himself, an interest that only by chance includes the others in his preferences.

<sup>4</sup> See [Http://csf.colorado.edu/psn/marx/Archive/1867-C1/Part8/ch 31.htm](http://csf.colorado.edu/psn/marx/Archive/1867-C1/Part8/ch 31.htm)

We shall offer an example for each of these tendencies. In the case of conservatism, we propose David Hume's theory as an example. In that of progressive utilitarianism, the philosophy of Jeremy Bentham. In the case of non-utilitarianism, Adam Smith's "asystematic system"<sup>5</sup>. The aim of this work is, precisely, to create examples and prototypes to understand the underlying ideas of the theories, and this fact perhaps could make us unfaithful to some ideas of these authors. But we cannot avoid pointing out that these theories seem prototypical, since all three of them arrive at a philosophical and economic complete social system (something unusual, but also observable in Marx's foreseen breaking of time theory).

But for that same reason, as we have found problems in creating a prototype for the creative present theory based on Adam Smith's system, we could enlarge our proposal to Schumpeter's or Nietzsche's philosophy.

Hume's tendency towards conservatism is based on utility<sup>6</sup>, although it could be imagined to exist a sentimental or romantic conservatism, nearer to anarchism. However, the repeated recollection of a romantic past reveals an escape from the present and, perhaps, a fear of future. It shares, in this sense, some of Hume's theories, like the fear of changes that could break the instable present equilibrium. As Hume said,

"I may venture to affirm of the rest of mankind, that they are nothing but a bundle or collection of different perceptions, which succeed each other with an inconceivable rapidity, and are in a perpetual flux and movement..." (Hume 1964a, 534).

Besides, we can only extract a mental fiction when observing external things, a subjective idea formed by impressions. Since, according to Hume, the very same perception of reality depends on habit, the possibility of transgressing these habit rules causes great anxiety

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<sup>5</sup> As Griswold (1999, 308) says, the Smithian system tries to free politics from the idea of system.

<sup>6</sup> We are conscious that many authors reject that Hume's ideas were conservatism, and some even affirm that his theory was not based on utility. But we consider that Hume's aim was to make social science take part in the idea of utility and that many of his conclusions were conservatism and, consequently, we can use it as a prototype.

that leads him to defend the preservation of these rules.<sup>7</sup> In principle, it seems that the phenomenalism theory had to defend absolute anarchism, as we could not assure the existence of reality beyond the present impression of a particular man. But, as irrealism is psychologically untenable, it ends up defending tradition, from where the relation of ideas that construct language are supposed to have emerged<sup>8</sup>. According to Hume, institutions must be valued for their survival: this is “institutional Darwinism”, in which we become tightly devoted to past social constructions, forged by habit, because we sense in them an implicit knowledge that the feeble human reason is not always capable of distinguishing<sup>9</sup>.

Certainly, his conception of the ego created great problems in Hume’s philosophy – and also in his social theory and in his definition of freedom, a concept he believed not capable of demonstration. In his theory of human action, men are moved by impulses, and their actions are compelled by environmental pressures. In his economic theory, it is not possible to make interpersonal comparisons of utility nor it is possible for a man to make personal comparisons of pleasure between the past and the present: an ego would be needed to make the comparison. So, in the style of Austrian economics, man only can avoid the harmful consequences of his actions through a process of trial and error that creates habits beneficial to the individual and the preservation of the species – obviously, when this preservation is achieved, an a posteriori reflection on one’s survival.

<sup>7</sup>The very same sceptical doubt led him to critical situations: “The intense view of these manifold contradictions and imperfections in human reason has so wrought upon me, and heated my brain, that I am ready to reject all belief and reasoning, and can look upon no opinion even as more probable or likely than another. Where am I? Or what? From what causes do I derive my existence, and to what condition shall I return?... I am confounded with all these questions, and begin to fancy myself in the most deplorable condition imaginable, inviro’d with the deepest darkness, and utterly depriv’d of the use of every member and faculty...” (Hume 1964a, 548).

<sup>8</sup>In fact, although on his philosophical path Hume started at scepticism, in the end he developed a constructive philosophy. Although anti-rationalist, in the sense that it does not cope with contractual theories, it was not at all irrationalist. García Roca (1981) has tried to free Hume’s epistemology from sceptic interpretations; Tasset (1999) tried the same with his moral and political philosophy. Hume’s theory has a more systematic and unitarian character than has been claimed by the interpretations that accuse it of naïve scepticism and being a dead-end. Not even Hume considered himself a sceptic (Salas Ortueta 1967, 148). For different interpretations of Hume, see Dow (2002).

<sup>9</sup>For that reason, in the attempt to construct a full science of human behaviour, the “History of Great Britain”, apparently a work exclusively of historical interest, also is included in the system, as it seeks the past in history. See Norton (1965).



Hume's conception of time is similar to what some have called "Greco-Latin or Dionysian conception". This mentality is catastrophic and stresses the fact that man is always returning to the same point, to the beginning, always seeking the same pleasures and making, in his way, identical mistakes. We are enjoying ourselves "over the remains deceased" and, after that joy, there always is a touch melancholy and absurdity. As we are continually resuscitating from the oblivion of the past, man can repeat the habit without a consciousness of having made a mistake. Time has a circular shape and there is no progress in human well-being because, from the pleasure that is forgotten with the generations, there always remains the sentiment of melancholy.

"Fear not. My friends, that the barbarous dissonance of Bacchus, and of his revellers, should break in upon this entertainment, and confound us with their turbulent and clamorous pleasures... but the sun has sunk below the horizon; and darkness stealing silently upon us, has now buried all nature in an universal shade... And is the image of our frail mortality for ever present with you, to throw a damp on your gayest hours, and poison even those joys which love inspires!... Yet a little moment and *these* shall be no more. We shall be, as if we had never been. Not a memory of us be left upon earth; and even the fabulous shades below will not afford us a habitation. Our fruitless anxieties, our vain projects, our uncertain speculations shall all be swallowed up and lost. Our present doubts, concerning the original cause of all things must never, alas! be resolved." (Hume 1964, 200-3).

Man is pursued by a "spectre", the distrust of "the causes from which he derives his existence" and of the "condition to which he shall return". That shadow is so near, just skin-deep, that man holds on to the security of what has maintained his existence. We admire the past because its own capacity of existence makes it virtuous. We fear the future because it is unknown and inexistent. "Accordingly we find in common life, that men are principally concern'd about those objects, which are not much remov'd either in space or time, enjoying the present and leaving what is afar off to the care of chance and fortune" (Hume 1964b, 206). The consequences of the elimination of space are less important than that of the elimination of time in affecting imagination. The impossibility for the parts of time to coexist makes whatever distance in time cause a greater interruption in thought

than a similar distance in space, something that weakens the idea and, consequently, the passion. So, we worry about the people in other land, but not about future generations. We advance, while the distance to the past is continually increasing and the distance to the future reduces. Due to the fact that imagined distance is greater, the more historic the past is, the more it is worshipped; and the farther in the future something is, the more it is feared, just as we fear our own disappearance and that of matter and time themselves. In fact, Hume accepted the eventual disappearance of the universe

“and its passage, by corruption or dissolution, from one state or order to another. It must therefore, as well as each individual form which it contains, have its infancy, youth, manhood, and old age...”(Hume 1964c, 381).

In Bentham’s case, the conception of time is similar to what has been called the “Judaeo-Christian conception”, focused on the future and on a perfect world created by imagination. Man pursues a utopian fiction of his own mind’s creation. The present is never satisfactory when we compare it with that future world, but man is proud of being better than past generations were. Time is linear, and the theory is based on the idea of perfectibility. That is to say, new generations do not slide into “the best of all possible worlds”, rather they are susceptible to continual improvement, until the moment when the perfect world arrives.

Benthamian theory is based not only on methodological individualism, but also on normative individualism, that is to say, it advises us to be selfish because, if we are not, we risk being left with no objects of pleasure while others, with more eagerness, laugh in our faces. Pre-dominance of self-regard over other impulses is, for Bentham, almost an axiom. He underlines the philosophical concept of the necessary reference to self. Whatever man “demands for himself” can be considered pleasure. Whatever he avoids, is considered pain (see Stark 1952c, *The Psychology of Economic Man*, 422). According to

Bentham, this explains altruistic as well as “selfish” actions, so the difference between altruism – selfishness is not reality based<sup>10</sup>. Bentham did not believe in genuine self-sacrifice. “All men who are actuated by regard for any thing but self, are fools; those only whose regard is confined to self, are wise. I am of the number of the wise” (Stark 1952, *The Psychology of Economic Man*, 426).

But, according to Bentham’s comparative absolutism, to arrive to that perfect world it is necessary to manipulate individual present pleasure as a way of achieving a greater future pleasure. In fact, he created a new religion, that of social utility. His utilitarian heaven on earth can only have one canon: *the greater happiness of the greater number*, famous phrase pronounced by Francis Hutcheson.

Bentham considers that man is able to classify his pleasures on his own, without external imposition – in some occasions he does it unconsciously, as he is the only one who knows his preferences<sup>11</sup>. But, while using the famous statement of Hutcheson, he noticed that nothing prevented his theory from sanctioning the greater number, let’s say half plus one, being happy by crushing the smaller number, let’s say the half minus one. So, in the end, he broke with the utilitarian principle to be left, in 1831, with the maxim “the greater happiness”, that is to say, the social maximisation of happiness. As the last unit of pleasure decreases as we add new units (the finding of the decreasing marginal utility, discerned by Bentham and other contemporaries<sup>12</sup>), a social criterion can be that of the equalisation of wealth, and afterwards we must leave man to choose his own utilities freely<sup>13</sup>.

10 “That which in the language of sentimentalism is a sacrifice of private to public interest, [is] but a sacrifice of a self-supposed private interest in one shape to a self-supposed private interest in another shape: for example, of an interest corresponding to the love of power, to an interest corresponding to love of reputation: - of that reputation, of which power is the expected fruit” (in Stark (1952c, *The Psychology of Economic Man*, 428).

11 In this sense, Bentham was less paternalistic than other progressist utilitarians, like John Stuart Mill who, despite the fact that he criticised Benthamism, decided to weigh up the sum of pleasures, making a hierarchy of those that he considered of greater value or superior and those that he thought vulgar or of less emotional content. Until man has not had the opportunity to experience a pleasure, he do not have the freedom to choose it (see Mill 1984, 47, and Scarpe 1996).

12 Although some authors affirm that Aristotle had already introduced the marginal utility theory, and afterwards this theory was accepted by Davanzati, Montanari, Galiani, Condillac and Bernouilli (see Vivenza 2001, 143).

13 However, we can distinguish several periods in Bentham’s thought: firstly, he considered it desirable to equalise wealth. After the French Revolution, he feared such trans-

Contrary to what happens in Hume's theory, the main character of Bentham's is a fictitious ego that calculates based on an image of his desires and who, as he bases his action on an image of the future, can compare different men's pleasures.

We have decided to consider Smith's theory as representative of a creative present. Nevertheless, in many senses, especially with respect to entrepreneur theory, Schumpeter's is nearer this prototype. In philosophical terms perhaps Nietzsche's theory or Husserl's living present better suits this conception of time<sup>14</sup>.

Smith tried to criticise all the images that are placed above the present. "I have, however, a mortal aversion to all anticipations" (Mossner & Ross 1977, 270)<sup>15</sup>, he said of himself. Interpreting Smith's moral theory, man, after feeling the pleasure of an ordered world, is grateful to it without demanding anything in return and this is the first step necessary to feel the joy of living. Smith defines pleasure as something near gratitude, that is to say, a natural gift that is not necessary to summon up, and which can be felt in every human gesture, in every external or imaginary creation. But the seeking of pleasure, which on some occasions coincides with what goes on in the imagination with others, can anchor man to life, endowing him with something basic to human psychology: a conception of time, a hope for living.

Without this first impulse of gratitude, human feeling cannot begin. As gratitude leads naturally to the search to be corresponded and to receive, in return, gratitude, man reflects on his fellow beings and makes them the subject of his gratitude. This is the moment when, according to Smith, moral sentiment emerges, with the recognition of our equality with another being and his seeking to harmonise his feelings with our own. So, man seeks the affection of people in the pres-

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formations in property rights; in the end, we see a radical Bentham, who accepts that democratic majorities have to decide. As is well known, one way of reducing inequalities Bentham defended was the elimination of inheritance from distant relatives.

14 This present implies a direct perceptible contact, a "now" that retains but seeks the future (although Husserl's intuition is about eidetic essences, universal and ideal structures (Huertas-Jourda 1975, 163-195)). A philosophic, legal and economic theory based in this present position is found in Trincado (2003).

15 Letter 232, Smith to William Strahan, Canongate, Edinburgh, 20 november 1783.

ent and creates a relationship with current things at the present time.

Little by little, with the memory of the past, man creates a system of habitual pleasures and discriminates between external objects: the idea of beauty and, in particular, that of utility, gradually emerges. But when he identifies himself with this self-created system, we can say that his own creation comes to control him, and this makes him lose his sense of identity, i.e. it alienates him.

### 3. How can we save the theory

Toulmin and Hanson underlined the fact that scientists see the phenomena in a different way. Following Wittgenstein's line (Wittgenstein 1953, 193-207), Hanson (1958) distinguished between "see" and "see how". Let us consider, he said, the *settecentista* controversy on the movement of the Earth and imagine that Tycho Brahe and Kepler are at the top of a hill looking to the east at dawn. According to Hanson, Tycho "sees" the sun rising behind the fixed horizon. Kepler "sees" a horizon descending below an stationary sun. To see the sun as Kepler did implies having made a change of *Gestalt*. The two see the same sensorial data, but the disparities shown in their descriptions of what they see is due to the different interpretations they give *ex post facto* to the same sensorial data. Furthermore, neutral observational language does not exist since every observation possesses a semantic interpretation. Actually, they are not interpreting either, since interpreting is a way of thinking, an action, whereas seeing is an involuntary state of experience. The action of seeing implies seeing "something" and, in that sense, a knowledge about the conduct of objects. So, according to Hanson (1958, 5-24), a scientific conception involve a theoretical burden, as, to make phenomena intelligible, we have to consider them through a conceptual outline<sup>16</sup>.

Popper decided to take the conventional view seriously and observed that it is always possible to match a specific theory and the data. If some data come to be incompatible with the consequences of the

16 As Losee (1972) points out in the brief presentation he makes of Mill (1865) in relation to the inductive and verificative method, all circumstances together are inferred from facts, so we could only specify accurately a case describing the state of the entire universe in a given instant. If we make an inventory of circumstances, previous hypotheses are required to choose the relevant data.

theory, it is possible to adopt a number of strategies to “save” the theory. The data can be rejected or absorbed by the theory introducing auxiliary hypotheses, or modifying the rules of correspondence. Although the way of fighting against conventionalism, according to Popper (1959), is falsationism, letting the theories “being capable of revision”, it is always possible to elude the falsationist elements through these procedures.

In fact, the falsationist method is not applicable in Kuhn’s to the case of the rejection of a paradigm: different groups of scientists see different things when they look from the same position and to the same direction. Although a new paradigm usually absorbs concepts of the old paradigm, these borrowed concepts normally have a different meaning. When two alternative paradigms coexist, each considers their own theory superior. As both fields do not share common assumptions or values, we do not have a logical argument to demonstrate the superiority of one over the other. However, the result of the conflict between paradigms is not fortuitous, according to Kuhn. The triumphant paradigm must give a satisfactory treatment to the anomalies that have led to the crisis, but the argument must be, in the last analysis, one of persuasion<sup>17</sup>.

This does not mean that those arguments should be irrational, as there are rational persuasion methods. If both fields are able to learn how to translate each others’ assertions into their own languages, each of them can obtain some grade of comprehension from the others’ ideas, although they may give a different meaning to the theoretical terms<sup>18</sup>.

But, as we have pointed out, science can also use mutually incompatible theories, something Paul Feyerabend (1970) calls theoretical pluralism. For example, in physics, paradigms have fallen one after

<sup>17</sup> And, as Empedocle said, when the same man argues with another in front of the same audience, the same speaker is not due to succeed three consecutive times (Lloyd 1977, 28).

<sup>18</sup> As Kuhn (1962) says, a person that studies in a disciplinary matrix implicitly acquires some dexterity in interpreting and classifying based on the archetypical examples studied. Even different communities will disagree about the questions to pose and about what must be considered an acceptable answer; briefly, although they deal with the same phenomena, they will differ in what is or is not good science. Scientists, therefore, are something like riddle-solvers (Kuhn 1983, 294).

the other. Ilya Prigogine, 1977's chemistry Nobel prize, after having discovered and described dissipative structures, with his insights of non-equilibrium thermodynamics, declared the collapse of the ideal of classical physics, Einstein's theories and quantum mechanics included. This paradigm, Prigogine says, is based on a time line that can go backwards or forwards, so it can only be applied to the most simple and least interesting cases in the world and obliterates, characteristically, the human subject and one of his most specific dimensions: the irreversibility of time. Based on this criticism, Prigogine affirms categorically that classical physics alienates man and advocates the renewed conquest of the "meaning of reality, a question as old as humanity and very related to the other question of the meaning of the difference and relation between what is rational and what is irrational" (La Nueva Alianza: quoted by Diego Ribes in Feyerabend (1970, 12-3)).

#### 4. From image to reality

##### 4.1. The living present

We cannot avoid making an analogy between Prigogine's criticism and the one we are going to present ourselves from this point on. Briefly, we will point out that, although it seems, from these ideas, as if the theories were neither true nor false, but were just rules that indicate how to make inferences on phenomena (Suppe 1974, 162)<sup>19</sup>, the fact that we could falsify the theory - as it is, in short, an image -, does not mean that "a" reality does not underlie it.

This is the case with economics. Economic theories are simulations, which show us the casual relations of phenomena. But in our classification of time, theories based on an image all share being products of imagination: the creative and living present, in three dimensions, underlies that simple fiction, including the idea that time is irreversible. The fact that living reality underlies the image makes whatever imaginary theory contradictory and incoherent.

<sup>19</sup> Mach (1960) shared with Berkeley (1951) and Hume (1964a) the conviction that it is a mistake to assume that concepts and relations of science have a correspondence with reality. Hume granted, for example, that atomist theories can be useful to describe some phenomena, but he insisted on the fact that this does not give us evidence of the existence of atoms in nature. Besides, if scientists want to preserve a generalisation at all costs, the fact that the law cannot be contrasted will only lead to the temporal conclusion that the facts were imperfectly isolated from disturbing influences.

Let us analyse in these terms the previous classification.

#### 4.2. Discontinuity

Theories of the discontinuity of time, as discontinuous anarchism, try to destroy all human hierarchies. But, Proudhon, who considered government to be an authoritarian structure superimposed on society, defended the substitution of private property of goods with their possession, according to the needs of social control. This will be possible only if we set up a Power to impose the right to use goods and which possesses their “real” property.

That is to say, these anarchist theories make anarchism itself, order without the State, impossible.

The necessary incoherence implicit in all discontinuist anarchist theory leads their defenders to existentialism or nihilism; and to the inability of accepting a social construction for fear of awakening the authority phantom. They devote themselves to taking layers off life, as if searching for the core of an onion, until they become aware of the fact that it was only a trail of tears, and that nothing will be found in the centre.

In the foreseeable breaking of time, we have set as an example Marxian theory. But it must be said that the Marxian concept of history is itself alienated. Man is led by the inevitability of the future and by uncontrolled forces, a “non-human” science that will drive him to violence and to the Communist society<sup>20</sup>. In spite of his criticisms of anarchists, Marx also defended that the communist society, *a priori* not capable of definition, will be like the Paris Commune. According to Marx’s words, this was the political form, finally discovered, in which it would be possible to base labour emancipation (Marx and Engels 1971).

#### 4.3. Continuity

With respect to continuism, historians of economic thought have not

<sup>20</sup> Berlin (1979) criticises this idea of historical inevitability that seems to imply that to “explain” is, in the last analysis, to justify, as the actions are supposed inevitable.



yet defined the utility concept clearly enough to distinguish between different theories. Here, we will try to give a new and clearer definition of utilitarian action.

Utilitarian action, it is said, seeks pleasure and tries to avoid pain. But it can be said that non-utilitarian action has also a common element: the source of motivation is joy in the present, not pleasure; and joy only is provided by gratitude and disinterested concentration of “what it is”, which is shared by all men. In fact, in a critic stance we will say that if a man tries to fit the world with an image of his desire, reality will not be perceived by him, but obstructed by his image. If we could imagine an over-observer of all objects in the present, this over-observer would always find that the universal reality is novelty without cause and that it is not capable of individualisation<sup>21</sup>.

### Ethics

Smith struggled against theories based on utility. He devoted himself to the construction of a complete social theory whose basis confronted the foundations of the theories that supposed that human action is based on the love of a mental system. That is to say, we are not moved by a structure that our memory retains of longed-for pleasures and feared pain. But Humean passions are, precisely, based on that structure: on the habit of the association of ideas, threatened by the desire for survival and, in short, by the death instinct<sup>22</sup>.

Utility, Smith says, is like beauty, something of little importance to his moral theory. We think that shapes that instinctively captivate us will provide us with a sensation of pleasure. Even cause and effect is a type of subtle beauty that greatly impresses men. They are impressed by the beauty of the animal and plant kingdom, the great natural ecosystem in which every element seems to fit like a great puzzle and every species is adapted to the niche for which it seems to have been created. That is to say, utility is, the same as imitative arts, beauty (Smith 1983).

<sup>21</sup> Besides, also under a critic stance, we can point out that pleasure depends on material and neural conditions and dispositions; joy does not; and that for joy to emerge, shared freedom is necessary; for pleasure it is not (see Trincado 2003).

<sup>22</sup> Haakonssen (1981) and Vivenza (2001, 97-104) freed Smith's moral and law theories from the utilitarian label. The problem of Smith's utilitarianism has also been set out in, amongst other works, Griswold (1999, 540).

Hume himself provided this conception of utility as a kind of beauty. Probably, Smith adopted this idea from his philosophical theory. So, although to Hume men act attracted by pleasure and try to avoid pain, his concept of utility is more pure and slightly different from the one that would become more widespread later, which Bentham accepted. According to Hume, utility is not susceptible to the measure or comparison that Bentham made with the utilities of different men and, so, Hume's theory is based on a collection of atomistic beauties perceived only subjectively<sup>23</sup>, and based on the idea of the spectator<sup>24</sup>.

Bentham adhered Hume's fiction theory and gave a special importance to language in the interpretation of reality and, even, in the creation of it<sup>25</sup>. But there is a great distance between Hume's and Bentham's theory: there is a step between the Humean philosophy of Being, and James Mill's empirical psychology, which consists of neuronal attractions and repulsions producing pleasure or pain. In *Chrestomatia*, materialist Bentham's theory can be made out. Bodies are constituted by masses of disperse matter, by big atoms encrusted in vacuum. Hume, on the contrary, had considered vacuum to be philosophically inconceivable, something that made it impossible for him to demonstrate the non-existence of vacuum.

## Law

Hume's legal system is based on the fear of the disappearance of society in case of transgression of the law. This can be matched with his theory of knowledge, in which it is concluded that the cause-effect relationship is only a fruit of our imagination and of habit. In that sense, our relationship to things, if they have identity in and of themselves, something that Hume could not assure, is so fragile that every new event can break it. As Burke said about the strong impression the death fear and our admiration for the Sublime produces in human

23 Although the valuation mechanism of Hume's ethics seems to imply an objectivity and ethical cognitivism (Tasset 1999, 74-86).

24 Haakonsen (1981, 41) calls Hume's "utility of the means" as opposed to Bentham's "utility of the ends". But he does not make explicit whether Hume was aware of this distinction or not.

25 In fact, he tried to create a language of his own to free words from the "poisoned" connotations which they could have acquired in time. Other theorists have also tried to do this, introducing new words as "catallactics" to name the market, etc... (Hayek 1988, 110-112).

mind:

“The passions therefore which are conversant about the preservation of the individual turn chiefly on pain and danger, and they are the most powerful of all the passions... No passion so effectually robs the mind of all its powers of action and reasoning as fear. For fear being an apprehension of pain or death, it operates in a manner that resembles actual pain” (Burke 1909, 36/51)

As in Charles Darwin’s theory later, evolution does not imply the assumption of progress to something better, only the consciousness that the survivors, in their mutual dependence, will be the most suitable for the adaptation to the environment and possessors of a procreation ability (Schwartz 1987)<sup>26</sup>.

Hume’s philosophical theory concluded that the cause - effect relation and the knowledge itself are based on an imagination process<sup>27</sup>, and that passion consists of mental movements of attraction and repulsion. But Smith thought that cause and effect had an entity of its own, and he had faith in the existence of an ordered external world. Bentham, on the contrary, although he accepted phenomenalism, could not assume Hume’s conclusions, and he said that Hume’s *Treatise* is a book...*from which, however, in proportion to the bulk of it, no great quantity of useful instruction seemed derivable* (Bentham 1983, 275).

Both Bentham’s certainty of the existence of the world and his confidence in human capacity to understand it, made him step forward and construct a theory, not based on the fear, but on the hope of progress. So, Bentham conceives of society as a great puzzle in which the pieces’ movement make the shapes fit and paints beauty predetermined by the very same constructor of the game – let us say, the State.

We have already talked about Smith’s philosophical realism. But the same applies to natural law (see Trincado 2004). Smith affirmed that the origin of justice is not to be found in utility, a discretionary image of the future. Rather it is a natural feeling in human beings - felt in the present – that precedes the law<sup>28</sup>. From human nature “emerges” indignation in the pres-

26 For contemporary anthropologic theories that defend utility as a survival determinant and reproductive category of socio-cultural systems, see Campbell (1985); or Harris (1983).

27 In this line are the authors that consider tradition to be a moderator of the possibilities of reason, a sort of institutional apprenticeship based on an evolutionary epistemology (Hayek 1988).

28 Smithian justice is dealt with in Haakonssen (1981); Griswold (1999); Vivenza (2001); or

ence of a crime committed against a loved one, despised under no circumstances by the criminal. Law only respects this feeling, it does not create it. This contradictory feeling of indignation towards the arrogance of the criminal, being natural, can be inhibited, but not eliminated. In this sense, Smith does not set himself as a judge: theory is about “being”, not about “what ought to be”.

The origin of punishment is more a question of moral damage than of physical damage. It is inflicted, not to reduce pain or increase the pleasure of those affected, but based on the resentment of the relatives of the unrepentant criminal’s victim (Smith 1978, 104)<sup>29</sup>.

So, the foundation of law is not a remote consideration of utility, which will use punishment of a man for an imaginary end. This image only gives justice with an artificial obscurity, when the feelings of a man whose moral sentiments have not been corrupted can, in general, judge the correct measure of punishment of crime.

So, then, at the moment man delegates justice, the judge can act according to two principles: according to the principle of authority or according to the principle of utility. If he acts according to the principle of authority, Power is exerted to make itself necessary and, in so doing, it tries to please both the injured and the criminal at the same time, by imposing injustice. When Power acts according to the utility principle, the State, seeking order and the prevention of natural resentment, establishes justice. In this last case, the judge imagines he puts himself in the place of the victim, the only way of not creating a feeling of impotence and rage at the system. The real problem is, then, how is it possible for the State to control its arbitrary power and act according to the principle of utility? Something that, in the final analysis, is impossible: we have to rely on the ruler’s prudence. But, as Smith points out, I have never known much good done by those who affected to trade for the publick good (Smith 1976, 456).

Actually, Smith, like Bentham, presented an idea of utopia. But, in Neusüss’ (1968) terminology, Smith’s utopia is a “vertical” one, whereas Bentham’s is “horizontal”. In the horizontal case, utopia will constitute the crowning of a linear development of history evolving to the supreme

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Trincado (2000).

<sup>29</sup> Report of 1762-3, ii, 90.

good. In the vertical, utopia will act perpendicularly across historical process, renewing at every instant the contrast between reality and the ideal, fragmenting the accomplishment of utopian intention. Nevertheless, it is not compulsory to think that utopia will definitely be achieved. The first utopian ideal is teleological; the second one, ethical.

## Economics

With respect to economics, the differences between Hume's and Bentham's theories and that of Smith are based on their different conceptions of utility; of freedom; of order; and of time... We do not intend to describe here thoroughly these three economic theories, as that analysis is beyond the scope of this paper. But we would like, at least, to point out the non-utilitarian character of Smithian economic theory.

Smithian division of labour is more a result of a game or a creative inclination, keen on finding reality, that a product of an individual or social anticipation. Besides, in Smith's theory the positive consequence of wealth creation and economic growth is not that it increases the quantity of "happiness" which money makes available, but the joy it creates, and the possibility of "breaking" a habit, enjoying the feeling of curiosity and... the construction of a continuous conception of time. That is not a pleasure: joy does not seek a foreseen image but is, precisely, freeing yourself from an image. In fact, it seeks nothing. It is there, waiting in the open space for man to "let himself" enjoy the company of present beings. With respect to the entrepreneur, it cannot be doubted that the Schumpeterian creative entrepreneur or, more recently, Kirzner's, shows an antiutilitarian version. But Smith feared any admiration of that entrepreneurial "creativity": Bentham's *projector* risks the accumulation of capital only to seek an image of its mind. This image could be projects, in certain cases too risky, which only seek to satiate the pride of ordering or directing labour.

Coase posed that State justice or entrepreneurial hierarchy (be it a dictatorial or a democratic one) exist because hierarchy reduces transaction costs in relation to market or damages compensations. This hypothesis is used nowadays in the Business Theory. However, imposing a mental system always implies the elimination of the possibility of letting oneself be led by a non-functional creation. And, for Smith, that is due precisely to the fact that it is impossible to give an external incentive to creative labour, much less through punishment. The creative action is not a thought-

ful or pondered action: it simply emerges. Transactions reduce their own costs, but “without thinking about it” and because men’s actions seek to “raise” themselves over the costs and surpass them, as a way of creating and enjoying, in the present, the side of economy that is like a game (see Trincado 2007).

## 5. Summing-up and Conclusion

In economics, theorists suffer from a suspicion that mainstream science uses methods of persuasion, supported by Power, to eliminate all elements critical of the dominant paradigm. We have indeed presented a classification of economic thought based on time that shows the picture of a methodological anarchism; and we have showed some philosophical, social and economic ideas that emerge from the proposed classification. Its mental fertility makes it possible to compare totally different theories.

Our proposal of classification has been based on the psychological personal experience of time, which determines the images “rhetoricians” seek to persuade with. Memory but also oblivion, have been emphasized. We have firstly used the traditional distinction between continuism – discontinuism. Discontinuity can be illustrated in the form of a constant breaking of time, as is the case in some anarchist doctrines; or a foreseeable breaking of time, as is the case with the catastrophic crises theories or with Marxian theory. In the theories based on the continuity of time, we have posed a distinction between three branches: the first based on the past, the second based on the present, and third based on the future. Specifically, we have named each branch, first, conservatism based on utility; second, creative present (non utilitarianism); and, third, utilitarian progressism. We have offered a “prototypical” example for each of these tendencies: in the case of conservatism, Hume’s theory; in that of progressist utilitarianism, the philosophy of Bentham; finally, in the case of non-utilitarianism, Smith’s system (and we have enlarged here our proposal to “present living” philosophy).

As we have said, although it seems, from conventionalism, as if the theories were neither true nor false, but just rules that indicate how to make inferences on phenomena, the fact that we could falsify the theory, does not mean that “a” reality does not underlie it. In our classification of time, theories based on an image all share being products of imagination. The fact that living reality underlies the image makes whatever imaginary the-

ory contradictory and incoherent.

It is our hope that we continue to show the fertile possibilities of broad application of this classification.

## References

- Backhouse, Roger E., (editor), 1994, *New directions in economic methodology*, Routledge, London and New York.
- Bentham, Jeremy, 1838-43, *The Works of Jeremy Bentham, Published under the superintendence of John Bowring*, 11 vols. William Tait Russell & Russell, Edinburgh.
- , 1948, *A Fragment on Government and an Introduction to the Principles of Morals and Legislation*, edited and introduced by Wilfrid Harrison, Basil Blackwell, Oxford.
- , 1977, *A Comment on the Commentaries and A Fragment on Government*, edited by J. H. Burns and H. L. A. Hart, The Athlone Press, London.
- , 1791, *Panopticon; or, The Inspection House*, London.
- , 1983, *Constitutional Code. Volume 1*, edited by F. Rosen and J. H. Burns, in *The Collected Works of Jeremy Bentham*, Editor General F. Rosen, Clarendon Press, Oxford University Press, Oxford.
- , 1983, *Deontology, together with a Table of the Springs of Action and Article on Utilitarianism*, edited by Amnon Goldworth, in *The Collected Works of Jeremy Bentham*, Editor General F. Rosen, Clarendon Press, Oxford University Press, Oxford.
- , 1983, *Chrestomatiæ*, edited by Smith and W. H. Burston, in *The Collected Works of Jeremy Bentham*, Editor General F. Rosen, Clarendon Press, Oxford University Press, Oxford.
- 1989, *First Principles preparatory to Constitutional Code*, edited by Philip Schofield, in *The Collected Works of Jeremy Bentham*, Editor General F. Rosen, Clarendon Press, Oxford University Press, Oxford.
- , 1990, *Securities against Misrule and other Constitutional Writings from Tripoli and Greece*, edited by Philip Schofield, in *The Collected Works of Jeremy Bentham*, Editor General F. Rosen, Clarendon Press, Oxford University Press, Oxford.
- , 1993, *Official Aptitude Maximised; Expense Minimized*, edited by Philip Schofield, in *The Collected Works of Jeremy Bentham*, Editor General F. Rosen, Clarendon Press, Oxford University Press, Oxford.
- , 1995, *Colonies, Commerce, and constitutional Law: Rid Yourselves of Ultramarina and Other Writings on Spain and Spanish America*, edited by Philip Schofield, in *The Collected Works of Jeremy Bentham*, Editor General F. Rosen, Clarendon Press, Oxford University Press, Oxford.
- , 1996, *An Introduction to the Principles of Morals and Legislation*, edited by J. H. Burns y H. L. A. Hart, in *The Collected Works of Jeremy Bentham*, Editor General F. Rosen and Philip Schofield, Clarendon Press, Oxford University Press, Oxford.
- , 1997, *De l'ontologie et autres textes sur les fictions*, Texte anglais établi par Philip

- Schofield, Traduction et commentaires par Jean Pierre Cléro et Christian Laval, Éditions du Seuil, Paris.
- , 1998, "Legislator of the World", *Writings on Codification, Law and Education*, edited by Philip Schofield y Jonathan Harris, in *The Collected Works of Jeremy Bentham*, Editor General F. Rosen and Philip Schofield, Clarendon Press, Oxford University Press, Oxford.
- , 1989, *First Principles preparatory to Constitutional Code*, edited by Philip Schofield, in *The Collected Works of Jeremy Bentham*, Editor General F. Rosen, Clarendon Press, Oxford University Press, Oxford.
- , 1990, *Securities against Misrule and other Constitutional Writings from Tripoli and Greece*, edited by Philip Schofield, in *The Collected Works of Jeremy Bentham*, Editor General F. Rosen, Clarendon Press, Oxford University Press, Oxford.
- , 1993, *Official Aptitude Maximixed; Expense Minimized*, edited by Philip Schofield, in *The Collected Works of Jeremy Bentham*, Editor General F. Rosen, Clarendon Press, Oxford University Press, Oxford.
- Berkeley, George, 1951, *Of Motion* in *The Works of George Berkeley*, ed. by A. A. Luce and T. E. Jessop, Thomas Nelson, London.
- Berlin, Isaiah, 1979, *Four essays on liberty*, Oxford University Press, Oxford.
- Boehm, Gehrke, Kurz and Sturn, 2002, *Is there progress in Economics? Knowledge, Truth and the History of Economic Thought*, Edward Elgar, Cheltenham.
- Burke, Edmund, 1909, *On Taste. On the Sublime and Beautiful. Reflections on the French Revolution. A Letter to a Noble Lord*, The Harvard Classics, edited by Charles W. Eliot, L. L. P. F. Collier & Son Corporation, New York.
- Campbell, N. R., 1957, *Foundations of Science*, New York: Dover Publications.
- Carnap, Rudolf, 1955, *Foundations of Logic and Mathematics*, in *International Encyclopedia of Unified Science*, vol. I, part I, ed. by O. Neurath, R. Carnap and C. Morris, University of Chicago Press, Chicago.
- Díez, José A.; Moulines, C. Ulises, 1997, *Fundamentos de Filosofía de la Ciencia*, Ariel Filosofía, Barcelona.
- Dow, Sheila C., 2002, *Interpretation: The Case of David Hume*, *History of Political Economy*, vol. 34, n° 2: 399-420.
- Duhem, Pierre, 1962, *The Aim and Structure of Physical Theory*, tran. by P. Wiener, Atheneum, New York.
- Feyerabend, Paul K., 1958, *An Attempt at a Realistic Interpretation of Experiencie*, *Proc. Arist. Soc.* 58.
- , 1970, *Against Method: Outline of an Anarchistic Theory of Knowledge*, in *Minnesota Studies in the Philosophy of Science*, vol. IV, ed. M. Radner and S. Winokur, University of Minnesota Press, Minneapolis.
- , 1989, *Límites de la ciencia. Explicación, reducción y empirismo*, Paidós, Barcelona.
- Foucault, Michel, 2007, "What is Critique?" in *The Politics of Truth*, Ed. Sylvère Lotringer. New York: Semiotext(e).



- García Roca, José 1981, *Positivismo e Ilustración. La filosofía de David Hume*, Universidad de Valencia, Valencia.
- Griswold, Charles L., 1999, *Adam Smith and the Virtues of Enlightenment*, Cambridge University Press, Cambridge.
- Haakonssen, Knud, 1981, *The Science of a Legislator. The Natural Jurisprudence of David Hume and Adam Smith*, Cambridge University Press, Cambridge.
- Hanson, N. R., 1958, *Patterns of Discovery*, Cambridge University Press, Cambridge.
- Heidegger, Martin, 1996, *Being and Time*, trad. Joan Stambaugh, Albany: State University of New York Press [1927].
- Herschel, John F. W., 1830, *A Preliminary Discourse on the Study of Natural Philosophy*, Longman, London.
- Hayek, F. A., 1988, *The Fatal Conceit. The errors of Socialism*, Routledge, London.
- Hume, David, 1964a, A Treatise of Human Nature being an attempt to introduce the experimental method of reasoning into moral subjects (primera edición de 1739 - 40) and Dialogues Concerning Natural Religion, *The Philosophical Works*, edited by Thomas Hill Green and Thomas Hodge Grose. Volume 1, Scientia Verlag, London.
- , 1964b, *The Philosophical Works*, A Treatise of Human Nature being an attempt to introduce the experimental method of reasoning into moral subjects (first edition 1739 - 40) and Dialogues Concerning Natural Religion, edited by Thomas Hill Green and Thomas Hodge Grose. Volume 2, Scientia Verlag, London.
- , 1964c, *The Philosophical works. Essays Moral, Political and Literary*, edited by T. H. Green and T. H. Grose, Vol I, Reprint of the New Edition, Scientia Verlag Aalen, London.
- , 1964d, *The Philosophical works. Essays Moral, Political and Literary*, edited by T. H. Green and T. H. Grose, in two volumes, Vol II, Reprint of the New Edition, Scientia Verlag Aalen, London.
- , 1869, *The Letters of David Hume*, edition J.Y.T. Greig, 2 vols., Oxford.
- Huertas-Jourda, J., 1975, *Structures of the "Living Present": Husserl and Proust*, in Fraser, J. T.; Lawrence, N., *The Study of Time II*, Proceedings of the Second Conference of the International Society for the Study of Time, Lake Yamanaka-Japan, Springer Verlag, New York, pp. 163 - 195.
- Husserl, Edmund, 1990, *On the Phenomenology of the Consciousness of Internal Time (1893-1917)*, Brough, J.B., trans. Dordrecht: Kluwer.
- Kuhn, Thomas, 1962, *The Structure of Scientific Revolutions*, first ed., University of Chicago Press, Chicago.
- , 1977, *The Essential Tension. Selected Studies in Scientific Tradition and Change*, The University of Chicago Press, Chicago.
- Lakatos, Imre, and Musgrave (ed.), 1972, *Criticism and the Growth of Knowledge*, Cambridge University Press, London.
- Lloyd, G. E. R., 1970, *Early Greek Science: Thales To Aristotle*, Chatto & Windus Ltd., London.

- Losee, John, 1972, *A Historical Introduction to the Philosophy of Science*, The Clarendon Press, Oxford.
- Mach, Ernest, 1911, *History and Root of the Principle of the Conservation of Energy*, tran. by P. E. B. Jourdain, Open Court, Chicago.
- , 1960, *The Science of Mechanics*, tran. by Thomas J. McCormack, Open Court, La Salle, Illinois.
- Madsen, Mogens Ove, 2012, "Keynes's early coginition of the concept of time". In *Keynes's General Theory for Today: Contemporary Perspectives*. Cheltenham: Edward Elgar, pp. 98-112.
- Marx, Karl, 1992, *Capital: A Critique of Political Economy*, translated by Ben Fowkes, Penguin, USA.
- Marx and Engels, 1971, *Writings on the Paris Commune*, Monthly Review: New York.
- McCloskey, D. N., 1994, *Knowledge and Persuasion in Economics*, Cambridge University Press, Cambridge.
- Mill, John Stuart, 1865, *System of Logic*, Longmans Green, London.
- Mossner, Ernest Campbell, and Ross, Ian Simpson (ed), 1977 *The Correspondence of Adam Smith*, Clarendon Press, Oxford.
- Mosterín, Jesús, 1984, *Conceptos y teorías en la ciencia*, Alianza Universidad, Madrid
- Moulines, C. Ulises, 1982, *Exploraciones metacientíficas: estructura, desarrollo y contenido de la ciencia*, Alianza, Madrid.
- Neusüss, A. (ed.), 1968, *Utopie. Begriff und Phänomen des Utopischen*, Neuwied.
- Nietzsche, F. 2013, *On the Genealogy of Morals*, translated by Michael A. Scarpitti and edited by Robert C. Holub, Penguin Classics.
- Norton, David Fate, 1965, History and Philosophy in Hume's Thought, in Bobbs-Merrill, Norton, D. F., and Popdin, R. H. (eds), *David Hume: Philosophical Historian*, Indianapolis.
- Pantaleoni, M., 1904, *Scritti varii di economia*, Milan.
- Pooper, Karl, 1959, *The Logic of Scientific Discovery*, New York: Basic Books.
- Ricoeur, Paul, 1983, *Temps et récit*, t. I., Seuil, Paris.
- Salas Ortuetta, Jaime de, 1967, *El conocimiento del mundo externo y el problema crítico en Leibniz y en Hume*, Universidad de Granada, Granada.
- Savater, Fernando, 1995, *Invitación a la ética*. Compactos, Anagrama, Barcelona.
- Screpanti, Ernesto and Zamagni, Stefano, 1993, *Outline of the History of Economic Thought*, Oxford University Press, Oxford.
- Smith, Adam, 1759, *The Theory of Moral Sentiments*, edited by D. D. Raphael and A. L. Macfie, Oxford University Press, Oxford.
- , 1983, *Lectures on Rhetoric and belles lettres*. Edited by J. C. Bryce, General Editor A.S. Skinner: Clarendon Press, Oxford.
- , 1976, *An Inquiry into the Nature and Causes of the Wealth of Nations*, Volume 1 and 2, Edited by R. H. Campbell and A. S. Skinner. Textual editor W. B. Todd (The Glasgow Edi-

- tion of the Works and Correspondence of Adam Smith), Liberty Classics, Oxford University Press, Indianapolis.
- , 1978, *Lectures on Jurisprudence*, Edited by R. L. Meek, D. D. Raphael and P. G. Stein, Oxford University Press, Oxford.
- , 1980, *Essays on Philosophical Subjects*, edited by W. P. D. Wightman and J. C. Bryce, with *Dugald Stewart's Account of Adam Smith*, edited by I. S. Ross. General Editors, D. D. Raphael and A. S. Skinner, Oxford: Oxford University Press first edition in 1795, London, ed. by Cadell and Davies (with Dugald Stewart in 1797)].
- Stark, W., 1952a, *Jeremy Bentham's Economic Writings*. Critical Edition Based in his printed Works and unprinted Manuscripts, Volume 1, Published for The Royal Economic Society by George Allen & Unwin LTD, London.
- , 1952b, *Jeremy Bentham's Economic Writings*. Critical Edition Based in his printed Works and unprinted Manuscripts, Volume 2, Published for The Royal Economic Society by George Allen & Unwin LTD, London.
- , 1954, *Jeremy Bentham's Economic Writings*, Critical Edition Based in his printed Works and unprinted Manuscripts, Volume 3, Published for The Royal Economic Society by George Allen & Unwin LTD, London.
- Stigler, George J., 1950, *The development of Utility Theory*, Journal of Political Economy, vol. 58, n° 4, pp. 307-27; vol. 58, n° 5, pp. 373-392.
- Suppe, Frederick, 1974, *The Structure of Scientific Theories*, The board of Trustees of The university of Illinois, Illinois.
- Suppes, Patrick, 1988, *Estudios de filosofía y metodología de la ciencia*, Alianza Universidad, Madrid.
- Tasset, José Luis, 1999, *La ética y las pasiones*, Servicio de Publicacións de Universidade da Coruña, A Coruña.
- Toulmin, Stephen, 1961, *Foresight and Understanding*, Harper Torchbooks, New York.
- Trincado, Estrella, 2000, *El iusnaturalismo no utilitarista de Adam Smith*, Información Comercial Española, n° 789, december 2000 – january 2001: 95-99.
- , 2003, *Crítica a la doctrina de la utilidad y revisión de las teorías de Hume, Smith y Bentham*, tesis doctoral, UCM, Madrid.
- , 2004, *Equity, Utility and Transaction Costs in Adam Smith's theory*, Storia del Pensiero Economico, July, 1 issue of the new series, general editors Piero Bini and Piero Roggi, 33-51, X001505036.
- , 2007, *Costes de Transacción vs Costes de Jerarquía en la Provisión de Bienes: una interpretación de la teoría Smithiana*, Revista de Historia Económica. Journal of Iberian and Latin American Economic History, n° 2, año XXV, otoño, pp. 261-292.
- Vivenza, Gloria, 2001, *Adam Smith and the Classics. The classical heritage in Adam Smith's thought*, Oxford University Press, Oxford.
- Vovelle, M., 1985, *Idéologies et mentalités*, Paris: La Découverte.
- Whewell, William, 1847, *Philosophy of the Inductive Sciences*, John W. Parker, London.

Wittgenstein, Ludwig, 1953, *Philosophical Investigations*, Macmillan, New York.

Zubiri, Xavier, 1998, *Sobre la esencia*, Alianza, Madrid