

Economics in Relation to Sociology: Dualisms and Vilfredo Pareto's Pluralistic Methodology*

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Abstract: Many economists remember the masters of Lausanne for their important contributions to general equilibrium and welfare economics, but Leon Walras and Vilfredo Pareto both pursued much broader social research agendas. Walras did this within the general framework of economics, by complementing his 'pure economics' with 'social economics'. Pareto, in contrast, first isolated economic theory from the influence of other social phenomena and distinguished between the result of theoretical economics and the concrete economic phenomenon. He then developed a general theory of social equilibrium which, *inter alia*, provided for a synthetic reconciliation of economics with sociology to understand the concrete phenomenon. This paper investigates the relationship between Pareto's economics and his sociology. Its main contribution is the clarification of the pluralistic character of his methodology. This is done by considering how dualistic distinctions became an important device for Pareto, with particular reference to Sheila Dow's notion of dualism and Andrew Mearman's categories of dualism. Pareto's pluralistic approach is shown as a neo-positive blend of 'temporary' Cartesian and non-Cartesian elements, which is not consistent with Dow's own Babylonian approach to economics. The paper also reveals the economic phenomena that Pareto considered were dominated by sociological influences and, therefore, not amenable to Cartesian analysis.

Key Words: *Economic Equilibrium, Pluralism, Vilfredo Pareto, Social Equilibrium.*

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1) Introduction

In Italy, the relationship between methodology, economics and sociology in Vilfredo Pareto's work has been given extensive treatment. Some original contributions even predate Pareto's *Trattato di Sociologia Generale* (Pareto [1916] 1935), with his economic students, who were exposed to sociology at Lausanne, writing on the relationship between the two fields. The most important study of this type was Gino Borgatta's "Le Azioni Pseudoeconomiche" (1912), who also subsequently marked Pareto's death with the insightful "I Rapporti fra la Scienza Economica e la Sociologia nell'Opera Paretiana" (1924). The twentieth century Italian contribution is too extensive to survey here, but it is adequate to note that the economic and sociological aspects of Pareto's work feature in the works of many prominent Italian scholars, including sociologists such as Giovanni Busino (1974, 1980, 1989 and 1991) and Maria Luisa Maniscalco (1994, 1999).

In the English speaking world, the subject has been treated less extensively, although it has by no means been ignored, especially since Vincent Trascio discussed the matter in his influential *Pareto's Methodological Approach to Economics* (Tarascio 1968). In the mid 1990s Michio Morishima edited *Vilfredo Pareto: Neoclassical Synthesis of Economics and Sociology* (1994, de Pietri-Tonelli and Bousquet), an historical collection of translated articles by Pareto's students and interpreters which emphasized the scope and synthetic character of his multi disciplinary approach.¹ The subject has also been treated several times in the new millennium: Aspers (2001) considered Pareto's distinction between logical and non-logical conduct as a basis for 'economic sociology'; *Pareto Economics and Society* (McLure 2001) demonstrated how Pareto's use of the mechanical analogy in both economics and sociology clarifies his relationship between these two fields of study; and *Vilfredo Pareto and the Birth of Modern Microeconomics* (Bruni 2002), which focused primarily on choice theory, culminated in an interesting, albeit flawed, discussion of Pareto's 'synthetic dream' in terms of a missing treatise on 'synthetic economics'.²

While the subject matter of this study is unchanged from that of the abovementioned English language research, the interpretative standpoint differs in two significant ways. First, it commences with reference to Pareto's ontological position, and shows how his methodology and his economic and sociological theory derive from this ontological position. Second, it makes the role of dualistic distinctions in Pareto's work explicit, and demonstrates how these distinctions assisted in setting out the relationship between economic and sociological theory. The notion of dualistic distinctions adopted in this study derives from the work of Sheila Dow (1990) and Andrew Mearman (forthcoming), and their associated critiques of the lack of realism in highly deterministic theory associated with the 'Cartesian mode of thought', especially that of general equilibrium economics.

¹ This collection was rather unfavourably reviewed by Pascal Bridel (1995), largely because other Italian and French works, such as studies by Busino and Freund, provide greater insight into Pareto. While Busino and Freund have both made major contributions, the collection remains a wonderful resource for scholars interested in the interpretations of the second generation of *Paretiani* of their master.

² Bruni's book is reviewed in McLure (2003b)

By showing that the dualistic character of Pareto's methodology and his methods is substantially qualified by his ontological position, this study demonstrates that his: pluralistic methodology is not Cartesian; pure economics is only 'temporarily' Cartesian; and sociology is not Cartesian. It also demonstrates that Pareto's use of dualistic distinctions is a key element in defining his 'mutually constitutive' relationship between economics and sociology and, as such, is a key element in the integration of 'temporarily' Cartesian and non-Cartesian theories. Other relevant findings of this study include identification of main economic phenomena that Pareto regarded as the subject of sociological analysis and the explanation of why Pareto regarded the history of economics, when treated as *bona fide* 'experimental economics', as a fundamental element of sociological analysis.

Section 2 of the paper outlines Pareto's ontological position. Section 3 defines the meaning of dualistic distinctions, and briefly introduces Dow's conceptions of Cartesian and Babylonian modes of thought. Section 4 discusses dualistic distinctions and Pareto methodology. Section 5 considers the theory of social equilibrium, which is the final goal of Pareto's sociological analysis. Section 6 examines economics in relation to sociology. The conclusions are outlined in Section 7.

2) Ontology

In her survey of mainstream economic methodology, Sheila Dow (1997, p.88) pointed out that the starting point for Keynes and, more recently, critical realists, was their ontological positions, which then determined their epistemology, methodology and ultimately the form of their theory. Vilfredo Pareto too was very conscious of ontology. However, Pareto's repeated insistence of relying on facts to validate theories, and his more general discussion of the relationship between facts and theories, has resulted in the secondary literature emphasising the positive and even Comptian foundations of Pareto's work (Tarascio 1968), while largely setting his ontological position aside.

Moreover, the structure of his *Sociologia* does not present ontological considerations as the starting point for the system. Instead, he commences with chapters on the character of science and on the character of human action, both of which rely heavily on the formal logic and definition with the development of sociological theory presented in a manner that implies that it derives from these definitions. This definitional and formal emphasis has been influential in many studies on Pareto's methodology, such as those noted in the introduction. However, the methodology and methods of analysis presented in Pareto's mature *Sociologia* has its roots in an ontological position that is evident in his earliest sociological studies, such as "I Problemi della Sociologia" (Pareto [1899] 1980) and *Les Systèmes Socialistes* (Pareto [1901-02] 1974). By commencing this study with a summary of Pareto's ontological roots, and examining how his methodology and method relate to these roots, a clearer appreciation is gained of what is most fundamental, and most important, in Pareto's approach to the social sciences. In this regard, three major elements of his ontological position must be highlighted.

First, the explicit recognition that all observed social ‘facts’ are influenced, to varying degrees, by subjective factors which ‘deform’ representations of the objective phenomenon. In *Les Systèmes Socialistes*, he observed that:

“our ignorance of facts, our passions, our prejudices, the ideas in vogue in the society in which we live, events that strike us forcefully and a thousand other circumstances that veil the truth and impede an exact impression of the objective phenomenon prevent our impressions from being an exact copy of the objective phenomenon which gave rise to them. We are in the situation of a man who views objects through a curved mirror; some of their proportions are altered. It must now be recognised that only the subjective phenomenon, that is, the deformed objective phenomenon, is noted there...” (Pareto [1901-02] 1974, pp.137-38).

Second, subjective influences need not totally dominate observation of social facts because subjective influences can be progressively reduced (not eliminated), although this may take centuries. The accumulation of scientific knowledge enables scientific observers to progressively reduce the influence of subjective factors on observations of social conduct, enabling observation to bring social scientists close to the objective phenomenon. In “*Economia Sperimentale*”, Pareto reflected that:

“I did not distance myself immediately from the teachers who had taught me the more or less metaphysical Economics that still rules us, and it is only now that I have absolutely rejected anything that is not rigorously experimental; which does not in the least take away from the gratefulness I feel for those who taught me the old Economics, because without the old Economics I could not proceed and reach the new.” (Pareto [1918] 1980, p.728)

Third, and probably the most unique aspect of his ontology, within the limits of the first two propositions, the objective phenomenon can be directly observed and the subjective phenomenon can be indirectly observed as residual sentiment evident from textual analysis (once pure reason has been stripped away from text). Consequently, written theories, social doctrines, newspaper etc., all came to represent objective data from which interaction between the subjective and objective influences can be observed.

The problem that Pareto faced, then, was how to undertake experimental investigation of social conduct when objective human action is influenced by subjective elements and when observation and study of objective human action in the social sciences is also influenced by subjective elements. For the purpose of this study, the important feature of the mode of thought that derives from Pareto’s ontological position, as represented through discussions of methodology and theory, is based on a general dichotomy of the analytical system that is based on the distinction between objective and subjective phenomena (see Section 4). More generally, Pareto’s methodology and methods of analysis rely extensively on particular dualistic distinctions. The issue was examined in McLure (2003a), but with only limited success because only a vague notion of dualistic distinction was employed. To rectify this shortcoming, this study follows McLure (2004b) by defining ‘dualistic distinctions’ with reference to noteworthy work by Sheila Dow and Andrew Mearman on dualism and modes of thought.

3) Dualistic Distinctions and Modes of Thought

Sheila Dow defines dualism as the “practice of organising thought by means of all-encompassing mutually exclusive categories, with fixed meaning” (Dow 1990, p.143). Each of the three attributes of the definition are important: (i) the all encompassing requirement ensures that each category is complete so it is defined globally; (ii) the mutually exclusive requirement ensures that the two elements of each dualism constitute a unique binary classification (‘x’ or ‘not x’); and (iii) the fixed meaning ensures that the dichotomy of meaning associated with the categories is unequivocal and enduring. This definition excludes ‘opposing categories’. For example, the Hegelian notion of thesis and antithesis are opposing notions that do not qualify as a Dow dual because both of the bi-polar categories gain meaning with reference to each other. As such, they are not ‘mutually exclusive’. The expected synthesis deriving from the opposing thesis and antithesis also destroys the bi-polar character of the original position. Furthermore, there is no presumption that opposites are all encompassing.

Mearman (forthcoming) has clarified some aspects of Dow’s work on dualism. He draws on Dow’s discussion of Hegelian opposites and the discussion in modern philosophy of “poles” which also treat bi-polar terms as opposites, to suggest that polar opposites may be associated with a continuum, with the opposites representing the two extremes of a continuum. For example, social systems may reveal varying degrees of centralisation, ranging from extremely centralised to extremely decentralised. Mearman’s main contribution to the matter is his suggestion that duals can be derived from poles when the continuum is conceptually split along some ‘fault line’. Duals that are derived from bi-polar concepts may be all-encompassing and have “fixed meaning”, at least in the sense that within some range the meaning is fixed at one point and open ended on the other. However, they are rarely “mutually exclusive”, rather, they are generally “mutually constitutive”. For example, in the social centralisation example noted above, no social system is purely centralised or purely decentralised. Innate human sentiment accommodates both socially and individually oriented conduct, which will ensure that enduring social systems have a mix of what may be called centralised and decentralised elements.

The definitions of Dow and Mearman imply two distinct conceptual dichotomies:

- (i) the *pure dual*, which fully conforms to Dow’s three criteria; and
- (ii) the *derived dual*,³ which is ‘all encompassing’ and has ‘fixed meaning’, but the bi-polar concepts are ‘mutually constitutive’ rather than ‘mutually exclusive’.

Dow’s and Mearman’s investigated the use of dualism as part of a critique of closed system analysis, as exemplified by mainstream economics. Dow’s chief concern is that dualism encourages a mode of thought in the social sciences that yields a high degree of theoretical determinism that does not agree well with real social

³ Mearman allocates numbers to the different types of duals (dual₁ for Dow’s pure duals and dual₂ for what is referred to in this paper as derived duals), and he calls these ‘heuristic’ duals if they are used for genuine scientific purposes and not for the purpose of encouraging false precision.

phenomena. In particular, defining categories dualistically facilitates representation of theory in Cartesian plains (or Euclidian space), where theory generates precise outcomes, deduced from closed theoretical systems in an internally consistent manner, that are not well linked to reality. The all encompassing criterion means that the duals have global application, they may not. The mutually exclusive criterion means that the two classes of binary choice may oversimplify classification by excluding phenomena that have both parts of the dual or no parts of the dual. Furthermore, the meaning of duals may not remain fixed over time in the real world.

Instead of ‘Cartesian thought’, Dow advocates a ‘Babylonian’ mode of thought for social sciences, where dualism and Cartesian determinism are largely replaced by broader conceptual categories that provide for more opened analysis and methodological pluralism, a pluralism of both the methodology of science and the theoretical approach of science. The application of such an approach to economics and the social sciences deliberately emphasises ‘realism’. However, it is a realism in which the range of pluralistic approaches accommodates alternative perspectives on reality, where inconsistencies between theories are accepted as largely unavoidable because alternative approaches reflect different epistemological positions. It is also realistic in the sense that Babylonian theory is motivated some practical application.

Mearman broadly shares Dow’s methodological position but contends that derived duals can have some scientific value when they are used as a temporary heuristic device to impose order on complex reality. That is, for use in preliminary analysis to act as a prelude to more general, and generally non-dualistic, investigation. However, for the purpose of analysing Pareto’s work it is also useful to consider dualistic terms when the requirement for “all inclusive” conceptual poles is relaxed. For this study then, two additional ‘quasi’ dualistic categories are also considered:

- (iii) the *quasi dual*; which is mutually exclusive and has fixed meaning like the pure dual, but the all encompassing character of the categories is only sub-global (i.e. not universal); and
- (iv) the *derived quasi dual*, which is mutually constitutive and has fixed meaning like the derived dual, but the all encompassing character of the categories is only sub-global.

For convenience of expression, the phrase “dualistic distinction” is used in this paper as a generic reference to cover any of the four categories noted above.

4) Dualistic Distinctions and Methodology

As evident from the three ontological propositions outlined in Section 2, the distinction between the subjective and objective influences how facts are observed. As a consequence, Pareto’s methodology accommodates theoretical analysis of three forms of phenomena: (i) the objective form (the relationship between real objects); (ii) the subjective form (the relationship between psychological states); and (iii) how “real phenomenon act to alter the subjective phenomenon and vice-versa” (Pareto [1900] 1980 p.181):

Objective and Subjective

The recognition of interaction between the objective and subjective forms has resulted in Pareto developing at least two distinct sets of analytical methods. One set for circumstances where subjective / objective interaction is unidirectional such that an individual's subjective intent is independent of objective events and acts as a constant (invariable) force on human action in like objective circumstances. This set of analytical methods provides for highly deterministic closed system analysis. Another set of analytical methods for when subjective / objective interaction is bi-directional such that an individual's subjective intent is interdependent with objective events, resulting in subjective intent acting as a variable force on human action in otherwise like objective circumstances. This set of analytical methods provides for a low degree of determinism and relatively open ended system analysis.

The implications for methodology of this dichotomy of analytical methods are profound. First, the methodology needs to be pluralistic to accommodate at least two diverse sets of analytical methods. Second, at least two diverse sets of analytical methods need to be unified and reconciled. Given the diversity between the approaches, a purely logical or analytical union is ruled out. Pareto's solution was a synthetic union which he characterised as a sequence of "successive approximations", with the theory and applied studies from one discipline complemented by theory and applied analysis from other disciplines. Third, interferences between various general laws, established from diverse sets of analytical methods, are acknowledged. Pareto explicitly acknowledged this as an unavoidable consequence of our necessarily imperfect state of knowledge. In this regard, in his "I Problemi della Sociologia" he writes:

"There does not exist, there will never exist, a theory whose internal premises represent facts. The premises of all theories were, are and will be necessary abstractions of certain characteristics of facts, in order to study these characteristics separately from others. This is because the human mind cannot embrace every complexity of a selected real fact in one treatment, even for the most simple of facts. It is therefore good that every theory moving from an imperfect premise is necessarily imperfect; not because one must reject it, but because one must complement it with other theories. ...

A law that permits exceptions is not a law because a law is simply a uniformity, and a non-uniform uniformity is logically inconceivable. The facts that [some] good gentlemen call exceptions are interferences between the various laws, the effects of which combine in a practical case." (Pareto [1899] 1980, pp168-169)

This quote re-affirms that Pareto's logico-experimental methodology was oriented towards the establishment of laws or general uniformities. However, to ensure that his methodology accommodated the pursuit of general laws, a number of dualistic distinctions were invoked to give his methodology clear definition. None of these distinctions were invented by Pareto, but their compound effect is important to the Paretian system. The most prominent, and important, of these dualistic distinctions are: *logico-experimental* and *non-logico* science; *form* and *substance* of

social arrangements; *primary* and *secondary* phenomena; and the *intrinsic* and *extrinsic* aspects of science.

Logico-experimental and non-logical science

Pareto's *Sociologia* identified two categories of science: the *logico-experimental* sciences and the *non-logical* sciences. The main limiting feature of Pareto's *logico-experimental* science is the explicit recollection that it is necessarily imperfect, and consequently contingent upon the "limits of time and space known to us" (Pareto [1916] 1935, p. 51). Consistent with the second ontological proposition in Section 2, the goal for Pareto's *logico-experimental* science is 'neo-positive' in the sense that it is concerned with understanding 'what is', but not in the sense that the subjective phenomenon should be excluded. In contrast, he regarded *non-logical* sciences as eschewing experimental methods (or the logical application of experimental methods) in favour of principles or doctrines from which the cause of certain events can be rationalised. The important point here is the necessarily imperfect state of experimental science:

"Practitioners of the *non-logical* sciences do not as a rule grasp the relative, contingent character of the *logical* sciences and speak of them as though they did envisage some "absolute"...They therefore imagine that the *logico-experimental* sciences have dogmas, such as ...the dogma that the theorems of *logico-experimental* sciences yield a "certainty" that gives us knowledge of "laws" and not merely experimental uniformities" (Pareto [1916] 1935, p. 1924-25).

On the surface, the dichotomy between *logico-experimental* science and *non-logical* science appear to be a *pure dual*. The categories are all encompassing in that they cover all approaches to science, they have fixed and highly defined meaning and they appear to be mutually exclusive. However, the definitions are mutually constitutive, in that *logico-experimental* science is one pole that lies at the extremity of a continuum, with the various *non-logical* sciences revealing different degrees of logic and experiment. As such, it is a *derived dual* with the 'fault line' across which these two approaches to science are divided is indeed close to the *logico-experimental* pole.

However, the *logico-experimental* approach does not exclude elements on *non-logical* science because of the imperfect state of science. The primary reason relates to the great difficulty of treating the objective in isolation from the subjective.

Form and Substance

In *Les Systèmes Socialistes* (Pareto [1901-02] 1974, p.150, p.168), Pareto discussed the distinction between the form of social arrangement and how they evolve and the substance of social arrangements. The form is simply the observed detail of a particular social system. Variations in the form are infinite. The substance is the substantive aspect. The existence of social cycles and the variation in the amplitude and frequency of such cycles is a matter of substance, and is therefore the subject of general theory. As noted earlier, experimental science deals with general uniformities, which means regularities related to substantive issues in Pareto's system.

Regularities associated with a given social form are considered as a mixture of description and rationalization, and do not qualify as logico-experimental science:

“... economists who, either because of their own interest, or having been lured by sentiment, justify what already exists, produce theories that agree with the facts; nor could it be otherwise, because their theories do nothing but add considerations, that are often inane, to the facts themselves. Those who preach protectionism where it already rules, free trade where it already exists, the issuing of paper money, and of public debt, where it benefits the government to make use of such means to make money, and the government itself has the power to impose them, are certain that they are never too far removed from the facts; all the more so since their opinion changes with the circumstances, in order to always obey orders blindly.” (Pareto [1918] 1980, p. 733).

Consequently, the different ‘forms’ of society is a specific issue, one which can be established by observation, but not one that is the subject of general theory.⁴ However, the distinction between form and substance is obviously approximate as there is a continuum between the extreme poles of form and substance. That is, scientists directly observe the form of social arrangements, but movement away from the specific form provides the perspective from which theoretical uniformities can be observed. The fault line that divides form and substance is the somewhat arbitrary point where enough perspective has been obtained to generalize laws that apply across different forms of society. This suggests that this distinction is a *quasi derived dual*, because the fixed meaning is mutually constitutive and the search for uniform laws is limited to known social forms, not all possible forms. For example, Pareto’s *Sociologia*, explicitly abstracts from the influence of physical elements (soil, climate etc) and external elements (influence of other societies that are external in space and in time) on social equilibrium and the theoretical investigation is confined to the people of Europe and the Mediterranean peoples from Africa and Asian (Pareto [1916] 1935, p. 11433-1434).

Primary and Secondary Phenomena

The form and substance divide is complemented by Pareto’s dualistic distinction between primary and secondary phenomena. Practical action is concerned with the full concrete phenomenon, but under Pareto’s notion of “successive approximations”, pure theory is confined to the study of the primary phenomena, with applied social science concerned with the scientific investigation of both primary and secondary phenomena. Social laws are universal, and derive from general theoretical studies of the substantive features of the primary phenomenon. Clearly the fixed meaning associated with distinction between primary and secondary phenomena is mutually constitutive, suggesting that it is a *derived dual*.

⁴ In Pareto’s *Sociologia* this dual was modified and given a different application when Pareto introduced the distinction between ‘special’ and ‘general’ sociologies (Pareto [1916] 1935, p.1467) where a ‘special sociology’ examines the “particular forms of various social phenomena” (Pareto [1916] 1935, p.13). In contrast, general sociology is concerned with the substantive matters that influence all forms of society: as the title *Trattato di Sociologia Generale* clearly indicates, it is a treatise on ‘general’ sociology which is concerned with substantive social regularities that apply across different social forms.

However, Pareto's notion of successive approximation is not limited to pure and applied studies from one discipline; at a minimum it requires synthesis of pure and applied disciplines using two different sets of analytical methods. Consequently, the primary and secondary distinction in one discipline is not all encompassing, universal laws from different disciplines interfere with each other. It is only "all encompassing" when the primary phenomenon is temporarily isolated for analytical reasons. It no longer remains "all encompassing" when the synthetic union of diverse analytical methods takes place. As a consequence, the distinction between primary and secondary phenomena can be regarded as a *quasi derived dual*.

Intrinsic and Extrinsic Elements

Pareto's understanding of the imperfect state of theory culminated in a distinction between the intrinsic and extrinsic elements of theory. The *intrinsic* concerns the soundness of theory in terms of its relationship to facts and the *extrinsic*⁵ concerns the relationship between a theory and society collectively without regard to the theory's intrinsic merit. Importantly, Pareto's methodology sees a role for both the intrinsic and the extrinsic in the scientific study of society. "Both methods, if used exclusively, are equally incomplete." (Pareto [1916] 1935, pp.503-04).

Intrinsic merit is considered with reference to the closeness of the relationship to theory and fact pertaining to the primary phenomenon, and the extrinsic considers the merits or demerits of theory for a society generally, or for some members of society (those who advance a theory or those who adopt a theory), irrespective of its intrinsic merits. While the growth of scientific knowledge about society may have extrinsic benefits, the important point for Pareto's methodology is that deviations between theory and observations of the social facts influence social behaviour. For example, social philosophies presented as scientific theory (non-logical science in Pareto's language) may have little or no intrinsic scientific merit but may influence human action in way that is extrinsically beneficial, or indeed detrimental, for society. For example, theories of justice may have little science but may influence human conduct in a manner that provides an extrinsic benefit.

Consequently, to understand human action, Pareto's logico-experimental science investigates and explains the intrinsic and the extrinsic aspects of science. Intrinsic aspects of theory contribute directly to scientific progress, and analysis of the extrinsic provides insights into human action when the individual's subjective intent is interdependent with objective events, with the extrinsic aspects of social doctrines and theories significant sources of 'persuasion' and preference modification.

Recognition that theories have intrinsic and extrinsic elements provides a starting point for analysis of interdependence between the subjective and the objective, as regularities in the relationship between the intrinsic and extrinsic elements of theory provide an objective basis for deriving hypothetical propositions about the impact of interaction between the subjective and objective phenomenon. Inductive study of history then provides the experimental data against which hypothetical propositions derived from textual analysis are tested.

⁵ Bruni (2002, p.40-41) dates Pareto's interest in the extrinsic aspect of science to at least 1898.

However, the boundaries between the intrinsic and extrinsic are not always clear. Theory, including logico-experimental theory, is necessarily imperfect, so too is our understanding of the intrinsic benefit of science. While a logico experimental theory is itself an expression of intrinsic science, this is contingent upon the current state of scientific knowledge developed from logico-experimental methods. As the state of knowledge changes, and as history provides greater perspective, non-intrinsic elements of current scientific theory will become clearer.

Non-Cartesian Pluralistic Methodology

Pareto's methodology is pluralistic and relies on synthetic unification to integrate conclusions derived from different sets of analytical methods. In light of Dow's critique of dualism, it may be come as a surprise that Pareto's pluralistic methodology rests on dualistic distinctions. However, none of Pareto's methodological distinctions are pure duals in Dow's sense. Rather, *logico-experimental* and *non-logical* science and the *intrinsic* and *extrinsic* aspects of science are *derived duals* because the dichotomies are, in part, mutually constitutive and not mutually exclusive. The remaining dualistic distinctions discussed in this section, like *form / substance*, *primary / secondary* phenomena; and *intrinsic / extrinsic* are weaker still. They are *quasi derived duals* because their all inclusive character is sub-global only. When there is synthetic union of different analytical methods, the all encompassing character of specific dualistic distinctions dissolves.

Pareto's methodology then, is clearly non-Cartesian. Is it therefore Babylonian? Pareto's interferences between social laws are indeed similar to the inconsistencies between laws that Dow accepts. However, the answer is unequivocally no! Babylonianism accommodates methodological pluralism: pluralism in the epistemological foundations of diverse methodologies as well as pluralism in analytical methods. Pareto, in contrast, embraced a pluralistic methodology, where one neo-positive methodology accommodated a pluralism of methods. The one methodology was experimental, but subject to ontological limitations and the differentiation between the intrinsic and extrinsic aspects of social science. One of the reasons for Dow's acceptance of a broader dualism is because she does not limit science to neo-positive ends. Indeed, following in Keynes' tradition, she regards the practical policy purpose of theory as a major motivating factor in the development of diverse theories and methodological frameworks. Pareto's focus in his post 1900 works was always on 'what is' and his advocacy of a pluralistic method did not extend to advocacy for methodological pluralism. As a result, his methodological approach to the social sciences is neither Cartesian nor Babylonian.

5) A General Theory of Social Equilibrium

As noted in Section 2, one of Pareto's ontological propositions was that subjective phenomena can be indirectly observed by considering their objective manifestations in social theories and doctrines. In section 4, it was shown that this shaped his methodological distinction between 'logico-experimental' and 'non-logical' science. In this section, the effects of this ontological proposition extent to the theoretical level in two ways: (i) first through the isolation of regularities in regard to the interaction between objective and subjective phenomena in 'logico-experimental' and 'non-

logical” social science; and (ii) to use (i) as an input into developing hypothetical propositions about human action in general. As a consequence, human action is divided into two broad classes that are analogous to Pareto’s two broad classes of science.

Logical and Non-logical Action

In Pareto’s system, action is logical when an actor’s subjective intent and his or her objective end are either ‘identical’ or ‘perfectly conformed’,⁶ and non-logical when an actor’s subjective intent and his or her objective end are not perfectly conformed. As such, the subjective phenomenon acts as a constant influence on human action in like objective circumstances. Pareto’s economic theory is predicated on logical action. However, in the case of non-logical action, the objective phenomenon and the subjective phenomenon are interdependent. A change in one may change the other. The subjective intent of an action to achieve an objective end may alter when the objective end is realised.⁷ Non-logical action of this type is examined using sociological theory.

As such, an economic event is only independent of sociological influences when the subjective intent of economic action is a constant influence on action in the same objective circumstances. However, when the economic event is the outcome of an interdependent mix of interests, sentiment and actions, then the sociological influence becomes significant and economic theory is complemented by sociological theory. Of course, non-logical action is not devoid of logic: non-logical action is not illogical action (Pareto [1916] 1935, pp *Reference*). Rather, non-logical action may be viewed as pseudo-logical, ranging from action that is very similar to logical action to action that is dominated by an increasingly variable influence from sentiment. As such, the distinction between logical and non-logical action is a *derived dual*, and there is a continuum of action where the degree of variability in the influence of subjective intent on action changes: ranging from the case where subjective influence on conduct is purely constant in like objective circumstances to the case where it is highly variable over time in otherwise like objective circumstances.

Ophelimity and Utility

The distinction between economics, as a study of logical action, and sociology, as a study of non-logical action, is directly related to another fundamental dualistic distinction: ophelimity (Pareto’s neologism for an exogenous index of pleasure from the satisfaction of tastes) and utility (an index of well being).

Ophelimity is a concept used by Pareto to facilitate analysis of market economic phenomena, especially exchange and production. However, ophelimity is not just an element of the broad ophelimity-utility dichotomy, it is also a conceptual dual in its own terms. An individual is either indifferent or not indifferent to a range of economics states. Ophelimity is limited to the relationship between a person and things. If a person is not indifferent, then ophelimity is associated with the range of

⁶ The phrase ‘perfectly conformed’ is used here to mean a *constant, enduring and stable relationship* when circumstances remain unchanged.

⁷ The classification table of non-logical conduct in the *Sociologia* (Pareto [1916] 1935, p.78) highlights the formal, rather than the essential, aspects of non-logic, with half the noted categories being of “scant importance to the human race.” (Pareto [1916] 1935, p.79).

states that are either quantified (x or not x) or ordered (preferred or not preferred). As quantities or orderings of ophelimity are all encompassing and have a fixed meaning, ophelimity is a *pure dual* at least at the analytical stage. Classing ophelimity as a *pure dual* is equivalent to noting that it is path independent – at any point in commodity space, ophelimity as a quantity or as preference order will be unchanged irrespective of how or by what means that point was reached.⁸

When Pareto's contribution to the exchange and production dimension of general equilibrium theory is considered in isolation from his methodology and contribution to other theories, it is unequivocally Cartesian: consumer goods, productive services and, most importantly, ophelimity are pure duals in Euclidian space with theoretical outcomes revealing a high degree of determinism. Indeed, Dow has argued that the Cartesian mode of thought "achieves its most consistent expression in general equilibrium theory" (Dow 1990 p.146), and Pareto was an unapologetic general equilibrium theorist.

However, in the case of Vilfredo Pareto, his economics needs to be considered in its methodological context. When his explicit requirement for synthesis is recognised, the apparent "all encompassing" character of duals in Pareto's general equilibrium economics only applies at the analytical stage, they become sub-global categories at the synthetic stage. Consequently, the distinctions noted above are only treated as pure duals on a temporary basis during the analytical phase. They become derived pure duals during the synthesis of economics with other disciplines. In addition, the other half of the ophelimity / utility distinction must be considered. In this regard, ophelimity is a part of utility. They are mutually constitutive, with ophelimity abstracting from the complication of benefits and costs to individuals when subjective intent is a variable influence on human action. The aspects of utility that are excluded from ophelimity are fundamentally variable aspects of non-logical conduct. When the difference in the character of ophelimity and utility is recognised, the diverse character of economics and sociology emerge, as well as the relationship between the two disciplines.

An individual's utility from action is not, like ophelimity, only concerned with the relationship between an individual and things; it is also concerned with the relationship between people and other people in a society. When the subjective intent of conduct is confined to the relationship between a person and things, and this applies to all members of a society, Pareto treated the subjective phenomenon as a constant force on human action in like objective circumstances (e.g. pure economics"). However, when the subjective intent of an individual's conduct is extended from a relationship between a person and things to include a person's views on things other people have/should have and how other people behave/should behave, Pareto no longer considered that subjective phenomenon as a constant force on human action.

Pareto's notion of utility represented a huge analytical problem, and one which he only managed to solve at the most general and imprecise level. For an individual, the variable influence of subjective intent means that the same objective phenomena may yield two different degrees of utility at two different points in time. As such,

⁸ See Mirowski (1989) for a discussion of path independence and path dependence in economic theory and McLure (2001) for a critique of Mirowski's treatment of Pareto with respect to this issue.

Pareto's notion of utility is not a pure dual in Dow's terms because its meaning is not fixed relative to a given set of objective conditions. Saying that utility is not a pure dual is equivalent to noting that utility is path dependent because interaction between subjective and objective events changes the utility field.

Pareto's analytical solution to path dependent utility was to subsume the relationship between a person and things within a broader focus on behaviour in a given social state. Specifically, individual's utility came to be considered with respect to his or her propensity to *observe* or to *violate* precepts prevailing in society (Pareto [1916] 1935 p.1473-4).⁹ That is, an individual's utility from conduct is considered relative to social norms. A non-conformist maximises the utility by acting outside the prevailing social norms and a conformist maximises utility by acting within the limits of prevailing social norms. As a result of this heightened degree of generalisation, deduction from hypothetical postulate is abandoned in sociology: it is replaced by hypothetical deduction from inductive investigation of theories.

From an examination of theories over centuries, Pareto noted that non-logical aspect of written text includes a constant subjective element, a sentiment, and a variable element, diverse blending of reason with subjective sentiment. Based on textual analysis, Pareto hypothesised human conduct responds to two broad categories of social force: a constant force from subjective sentiments, which he defined as residues; and a variable force associated with persuasion, which he defined as derivations (rationalisations, derived from 'sentiment', designed to alter others' preferences). He complemented this with the suggestion that individuals that comprise society are heterogenous, but that they are organised socially by elites, both economic and political, which impose order either by persuasive use of derivations or by direct force.

Social Equilibrium

Pareto's *Sociologia* was a general theory of social equilibrium. It was constructed on the synthetic union of equilibria for three distinct, but related, social states which may be termed: the economic state; the political state; and the socio-behavioural state.

Within this system, the economic state has two mutually constitutive elements: a logical element and a non-logical element. The logical element is the subject of the pure theory of general economic equilibrium, which is concerned with market forces associated with a given initial distribution of resources. It is predicated on a dualistic interpretation of ophelimity. The non-logical element is the subject of sociological analysis. It is predicated on the non-dualistic notion of utility.

The application of sociological analysis to understanding the economic state is most relevant when public policy seeks to alter the prevailing distribution of economic goods among people or modifies social constraints on the behaviour of people. It is also important when long period implications of economic markets are considered, such as when variations in the distribution of resources are related to purely

⁹ The relationship between people and things is simply an aspect to the broader relationship between individual conduct, group conduct and normal social precepts: the creation and distribution of economic goods is influenced by social norms, as well as variations in conduct around these norms by members of the community.

historical, and essentially non-logical, processes. Pareto used the dualistic dichotomy between speculators (risk takers) and rentiers (risk averse)¹⁰ to illustrate the non-logical aspect of economic conduct. In some periods of history, access to resources may be dominated by speculators; while in other periods of history ‘rentiers’ have dominated. The variations in their respective access to resources are not fully explained by the marginal theory of distribution in light of risk profiles of heterogeneous savers and investors and social discontinuities. To Pareto, this was important because non-logical changes in the prevailing economic sentiment among economic elites may change economic activity levels and impact on the potential for economic growth.

The political state concerns the balance between individual and collective rights associated with the actions of governing elites and their opponents. This balance is political and constitutional in character. The competing political elites are comprised of political actors who are classed as either foxes (cunning and indirect) or lions (forceful and direct). The patron client relations between dominant economic elites (rentiers and speculator) and current political elites serve the interests and sentiments of the ruling elite.

Pareto’s notion of political and economic elites equates to, what he calls, the ‘ruling classes’. What he calls the ‘subject classes’ (or the non-elites) is the subject of the socio-behavioural state which concerns the observed degree of conformity in general social conduct in the broader society. More specifically, it considers the balance between conformist and non-conformist behaviour relative to the prevailing social precepts in a given society at a given time. This balance reflects the satisfaction that individuals experience from different forms of social conduct, which is substantively a reflection of human sentiments (which Pareto treated in his theory of ‘residues’, which is discussed shortly).

The substantive sociological uniformity considered for stable social equilibria is the degree of centralisation / decentralisation. Social centralisation is mostly strongly linked to ‘centripetal’ forces associated with economic elites dominated by their aversion to risk, political elites that emphasise the needs of the “collective” ahead of individualism and a socio-behavioural balance that emphasises conformity. Social decentralisation is most strongly linked with centrifugal forces associated with economic elites dominated by their propensity for high risk taking, political elites that emphasise “individualism” ahead of the needs of the collective and a socio-behavioural balance that emphasises diverse, or non-conformist, conduct.

However, at any given point in time, a stable social equilibrium requires the balance between the economic and political states to be accommodated within the prevailing socio-behavioural balance. Conformists and non-conformists among the subject classes may be persuaded¹¹ by economic and political elites to alter the form of their conduct without threatening the stability of social equilibrium, but they are

¹⁰ Rentiers in this context are not simply ‘savers’. Savings are borrowed by investors who may have speculator attributes (high discount rate, variable income flow, high risk) or rentier attributions (cautious, secure income flow, low discount rate, low risk). Savers may also exhibit speculator and rentier attributes.

¹¹ Persuasion can take the form of derivations, quasi-logical explanation mixed with sentiment, or the exercise of direct force, such as through criminal codes and consequent punishment.

unlikely to make the substantive switch from being a conformist to being a non-conformist. In Paretian social theory, elite authority is always conditional on mass sentiment: there is no suggestion that interconnected elites exert unconditional power over the masses.

Importantly, Paretian social equilibrium is not a stable equilibrium, it is cyclical over time. Social movement results in a succession of new political and economic elites that replace elites in demise. These cycles represent the dynamics by which the economic and political states change, with enterprise becoming more or less inclined to risk and political elites more or less inclined to support individual or collective need. At the substantive level, the succession of elites changes the social and economic states, but substantive movement in the socio-behavioural balance is much less susceptible to the influence of volatile cycles.

Dualistic Distinctions in Pareto's Sociology

The picture of social equilibrium outlined above is descriptive in the sense that it largely abstracts from the theoretical elements that Pareto utilised to analyse social equilibrium. The discussion of political and economic states relies on behavioural analogies which are dualistic distinctions (foxes / lions, speculators / rentiers) and the socio-behavioural state is phrased in terms of the subject classes relative to the ruling classes (non-elite and elites). Once it is recognised that the heterogeneous elements of society are organised under the direction of elites, Pareto required theoretical elements to isolate the constant and the variable subjective influences on the conduct of the subject classes and of the ruling classes (political and economic elites).

From his examination of written texts, Pareto consistently found that there was a residual, an implicit or explicit sentiment or value, upon which the logic of theories and doctrines rested. He also found that some reasons derive logically from that residual, but most were quasi-logical rationalisations that derived from the residual sentiment and blended reason and sentiment in an ongoing manner. From this, Pareto labelled the constant subjective influence on human conduct "residues" (objective manifestations of an underlying human sentiment), and the variable influence on human conduct "derivations". As derivations seek to modify behaviour, and are also modified by behaviour, they are the mechanism through which the interactions between the subjective and objective phenomena are treated in Pareto's system.

Residues and derivations are, therefore, the two essential theoretical elements in Pareto's general sociology. He developed detailed taxonomies of these elements, which he tested against the study of history. Importantly, residues and derivations are derived duals in exactly the same manner as the distinction between subjective and objective form is a derived dual. Text may emphasize, and human conduct may be inspired by, sentiment alone (in which case the derivation is simply an expression of residues). Alternatively, text may emphasize, and human action may be inspired by, varying degrees of rationalisation based on the introduction of sentiment at different stages of reasoning.

Pareto regarded the substantive aspect of human conduct as being inspired by residues, but with the observed form of human conduct influenced by derivations. When he applied his study of residues and derivations to social equilibrium he associated residues with the substantive aspect of the social equilibrium (the degree of

social centralisation / decentralisation). Derivations were regarded as important in shaping the form of the social equilibrium (the institutional and political arrangements applying in a particular society).

The theory of social equilibrium is generally considered with reference to only two classes of residues: I, *instinct for combinations*; and II *persistence of aggregates*.¹² The instinct for combinations is the subjective force for change associated with a faith in the effectiveness of reordering social concepts and social arrangements. Persistence of aggregates is the subjective force for preserving the prevailing social relations, such as relations within the family, and between places and social groups. Derivations linked to Class I residues may advocate reformist ideologies (irrespective of the character of change advocated) and derivations linked to Class II residues may advocate conservative ideologies (irrespective of the social arrangement being preserved). The role of these two classes of residues is to explain elite economic relations, elite political relations, the relationship between economic and political elites and the relationship between the ruling and subject classes. The fundamental outcome is a dualistic representation of history:

“Among the many, many elements that have a bearing on social forms and on the development on those forms in history, evidently outstanding are the relative proportions in which residues are found to be functioning in the various social strata and especially the proportions of Class I and Class II residues in the ruling and subject classes respectively. History shows that a first rough outline of developments may be obtained by centering the main attention on those propositions, other circumstances of importance being considered subordinate to them.” (Pareto [1916] 1935, p.1921).

The distinction between *Class I* and *Class II* residues is a *derived dual*. Persistence of aggregates is one extreme pole of a continuum, and the extent of change associated with the instinct for combinations may vary from slight to radical. The relationship between residues and derivations is similar, although weaker, as it is *quasi derived dual* because derivations are partly constitutive of residues. Importantly, the relationship between *residues* and *derivations* also serve to qualify the form of conduct and reiterate why analysis of logical and non-logical actions require a different range of analytical tools:

“In the economic system the non-logical element is relegated entirely to tastes and disregarded... One might wonder, whether ... we might not relegate the non-logical element to the residues ... and proceed to examine the logical conduct that originates in the residues. That, indeed, would yield a science similar to pure, or even to applied, economics. But unfortunately the similarity ceases when we come to the question of correspondences with reality... In activity based on residues human beings use derivations more frequently than strict logical reasonings... Residues are not, like tastes, merely sources of conduct; they function throughout the whole course of the conduct developing from the source, a fact which becomes apparent in the substitution of derivations for logical reasonings.” (Pareto [1916] 1935, pp1442-1443)

¹² Six categories of residue are noted in his general taxonomy, but for making deduction from residues about social equilibrium, Pareto only relies on two.

6) Economics in Relation to Sociology

Economics and sociology are not mutually exclusive theories of equilibrium. Economic theory considers the logical actions within the economic state, with analysis of equilibrium under this state undertaken on a temporarily Cartesian basis. Sociological theory utilises economic theory when examining the economic state. In addition, sociological theory provides the opportunity to study the effect of non-logical action on equilibrium in the economic state. The non-logical aspects of the economic state are analysed and synthesised on a non-Cartesian basis.

“ ... there is almost no concrete problem that is exclusively economic, and not economic and sociological at the same time. In fact, very often the sociological part prevails over the economic part; examples of this are: the problem of free trade, or tariff protection; many monetary problems; almost all taxation problems; and other similar problems. Without leaving the experimental field, the problems of exchange and production can be taken out, and separate theories made about them. However, if one wishes to remain with concrete matters, it will be indispensable to synthesise the results obtained. Equally, one does not leave the experimental field if one studies the economic and sociological parts separately. However, one would leave this field if at the end these separate parts were not put back together, in order to obtain that whole which alone has experimental existence and which we have arbitrarily decomposed in abstract parts, simply for ease of study.” (Pareto [1918] 1980 , p. 733).

In the case of production and exchange, this quote suggests that in, the first instance, economists can proceed on the assumption that subjective forces are a constant force for action. This is temporarily Cartesian thought. As a second approximation, they need to investigate the real phenomenon for evidence that subjective influences are a variable force that impact on exchange and production. This is non-Cartesian analysis. The synthesis required under his methodology will need to account for pure economics, applied economics, the sociology of the economic state, and the impact of all these factors on social equilibrium. However, when the economic phenomenon is linked to activities of government (trade policy, monetary policy and fiscal policy), sociological factors tend to dominate the economic factors. This is because trade policy, monetary policy and fiscal decisions tend to redistribute economic goods, which Pareto regarded as having a significant effect on economic equilibrium and social equilibrium (bearing in mind that social equilibrium is inclusive of the economic equilibrium). The fiscal sociology that Pareto inspired in Italy is concerned with all of these issues: it blends the economic approach to fiscal theory and sociology to study the impact of government on the economy (McLure 2004a, 2005), with major contributions being made by Gino Borgatta (1912-13 and 1920) and, to a lesser extent, Guido Sensini ([1917] 1933, 1929).

When the economic and the sociological aspects of economic phenomena influenced by Governments are considered, the fundamental issue to Pareto and his followers was whether or not any losses from government action associated with ‘economic effects’, or what may today be called static efficiency losses, are offset (be it partially, fully or more than fully) by the ‘sociological effects’, or what today may be termed dynamic efficiencies. For example, is the ‘destruction of wealth’ that pure equilibrium economics associates with distorting taxes offset by better use of

resources by the beneficiaries of the government's protectionist policy. As action in this regard is treated as non-logical, offsetting benefits from sociological effects cannot be simply ruled out. This is particularly the case when it is recalled that rentiers are typically disadvantaged by government decision (Borgatta 1920), and that speculators benefit who have strong Class I residues that are associated with innovative change.

Another fundamental economic phenomenon that is dominated by sociological effects in Pareto's system is economic growth, which Pareto regarded as being governed by sociological influences in the very long term. Specifically, high growth is dependent on the propensity for risk among the economic elite being offset by conformist conduct among the subject classes who rich in Class II residues – favouring a persistence of the aggregate:

“In our day, for instance, the enormous development of economic production, the spread of civilisation to new countries, the remarkable rise in the standard of living among all civilized peoples, are in large part the work of speculators. But they have been able to do that work because they came from populations in which class II residues were numerous and strong ...” (Pareto[1916] 1935: 1578)

Consequently, if the subject classes are numerous and strong in Class II residues, long term economic growth effects of the sociological effects from protectionist measures that benefit speculators may more than offset the economic losses for protectionism.

Finally, Pareto classed the history of economic thought as an element of experimental economics, and suggested that it is an invaluable guide to sociological analysis of the economic phenomenon when that phenomenon is influenced by government decisions. For example, in “Economia Sperimentale”, Pareto ([1918] 1980) searches for regularities in the history of monetary theory. He finds that a cyclical pattern emerges, with theories fluctuating between stable currency (money-as-a-good) theories and fiat money (money-as-a-token) theories which rationalise excessive increase in the emission of paper money in particular circumstances. While the importance of a stable currency is usually acknowledged, Pareto suggested that theories emerge regularly advocating the issuing of paper money in a manner that depreciates the value of a currency. The purpose of such analysis is to note that economic theories pertaining to government action tend to reflect the interests of the prevailing government and related economic elites (e.g. speculators) against alternative elites (e.g. rentiers) and the subject classes. Pareto then verifies this through the study of economic history, and from the study of the history of economics and economic history, conclusions about the sociological character of economic phenomena are drawn:

“If one considers short periods of time, no longer than one century, one can suppose, at least for certain, indeed few countries, without moving too far way from experience, that money is an exclusively economic tool, and one can more or less accept the theory of money-as-a-good. However, for long periods of time, of several centuries, the sociological character of money becomes predominant, it appears as a tool that is always used to reduce the

debts of the State and of certain social classes, and therefore as a potent factor in the circulation of those selected classes.” (Pareto [1918] 1980, p. 736-737)

In an analogous way, Pareto used sociology to consider the impact of theories of protection, theories of public debt, taxation and ‘public needs’ on the struggle between speculators and rentiers, and establish the consequences of this social, including economic, equilibrium.

7) Conclusion

Pareto’s methodology and his economic and sociological methods derive from his ontological position on observing the relationship between subjective and objective influences on action. The outcome is a system of analysing human action based on a dichotomy, where one part of the system treats subjective intent as independent of objective human action, and the other part treats subjective intent as interdependent with objective human action.

Pareto’s methodology reconciles analysis of these two parts of the social system making extensive use of dualistic distinctions: *logico-experimental* and *non-logical* science; *form* and *substance*, *primary* and *secondary* phenomena and *intrinsic* and *extrinsic* elements of theory. However, none of these are pure duals in terms of Dow’s criteria. Rather, they are a mixture of derived duals and quasi derived duals. Consequently, Pareto’s methodology is not Cartesian. However, it is not Babylonian either, as there is no general methodological pluralism. Rather, there is just one neo-positive and experimental methodology, but one that operates within the limits permitted by his ontological position and his concerns with false determinism.

In regard to theories, the matter is more complex. *Pure duals* are used in the case of pure economics. Pure economics represents one part of the dichotomy that comprises the social system, the part that treats subjective intent as independent of objective human action. This is particularly important in the case of ophelimity, where the pure dual ensures that ophelimity is the same as path independent utility (to use the current term). However, this is only a temporary use of a pure dual during the analytical phase, when the synthesis of theories required by Pareto’s methodology takes place, the dualistic features diminish, as the dual is no longer all encompassing.

When theories concern non-logical action, Pareto’s dualistic distinctions are never pure duals, and analysis is not Cartesian, temporarily or otherwise. Analogies of human action (lions / foxes, speculators / rentiers) are derived duals, and theoretical elements are derived duals (Class I and Class II residues) or quasi derived duals (residues / derivations). Moreover, utility in the case of non-logical action is not a pure dual, its meaning is not fixed when other circumstances are unchanged, and is therefore path dependent.

However, most importantly, Pareto’s key dualistic distinctions are mutually constitutive. This is critical to understanding his expression of the relationship between economics and sociology. Specifically, ophelimity is an aspect of utility, non-logical action comprises aspects of logical action and economic equilibrium, studied with pure economics, is an aspect of social equilibrium, studied with general sociology. For phenomena related to exchange and production, the economic aspects

are captured by economic theory as a first approximation. However, when the economic state is influenced government actions in regard to monetary policy, trade policy and fiscal policy, and the relative economic authority of rentiers and speculators is altered by such government actions, Pareto regarded the sociological effects as dominating the economic. Public economics then, to Pareto, should be examined using sociological methods to determine the impact of government action on the economic equilibrium, and the broader (and inclusive) social equilibrium. Similarly, long term issues influenced by the non-logical factors that alter the distribution of economic goods, such as economic growth, were regarded by Pareto as sociological influences.

Finally, it should be noted that Pareto's creativity was significantly enhanced by his use of dualistic distinctions, which were generally used to extend the scope of analysis and lay the foundations for new theoretical analysis e.g. moving from a general theory of economic equilibrium to a general theory of social equilibrium (which includes the theory of economic equilibrium and also emphasises interdependence). However, rather than emphasising the pure dual that Dow is so critical of, he utilised derived and quasi duals.

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