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Dualistic Distinctions and the Development of Pareto's General Theories of Economic and Social Equilibrium

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Dualistic Distinctions and the Development of Pareto's General Theories of Economic and Social Equilibrium

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Abstract: This study examines the role of dualisms in Pareto's theoretical approach to economic and social equilibrium, with particular reference to the shift in his treatment of broad social phenomena as an aspect of applied economics to the subject of general social theory. It is suggested that dualisms associated with Pareto's recognition of ongoing interaction between subjective and objective social phenomena (or endogenous preferences in modern parlance) enabled the *inductive-deductive-inductive* sequence, utilised in the 1900 "Sunto di alcuni capitoli di un nuovo trattato di economia pura", to provide the foundation for sound general social theory in circumstances where theory deduced from a hypothetical postulate fails to derive results that accord with observed fact. One consequence of this new approach is an increased emphasis on the relativistic limits of social science and the study of welfare.

Key Words: Dualism, Equilibrium, Pareto, Relativism.

1) Introduction

It is now well appreciated that general interdependence is the fundamental and unifying aspect of Vilfredo Pareto's economic and sociological theories of equilibrium. However, the significant role of dualistic distinctions in the development of these theories is not well appreciated. Of course the secondary and historical literature has considered some of Pareto's important dual concepts, including the distinctions between *ophelimity* and *utility*, *elite* and *non-elite* elements of society and *logical* and *non-logical* conduct. However, the focus has, by-and-large, centred on the meaning and relevance of specific bi-lateral concepts, not the relevance of dualistic distinction to the overall development of Pareto's economic and social theory of equilibrium.

* The paper was initially prepared when the author was a Senior Fellow at the *Institute for Research into International Competitiveness*, Curtin University of Technology. The initial draft has since been revised in light of comments received from participants at: (i) the 2002 Conference of the History of Economic Thought Society of Australia (convened between 16 and 19 July at the University of New England, Armidale); and (ii) a 2003 seminar presented to the Economics Department of the University of Turin (convened 25 February 2003 at the Fondazione Luigi Einaudi). While retaining responsibility for any errors, the author would like to thank participants at the above mention fora for their comments, especially Fiorenzo Mornati and Roberto Marchionatti, and Paul Koshy for comments provided out of session.

Review of specific dualistic distinctions in isolation will reveal little of their significance in shaping Pareto's intellectual contribution. For example, many (although not all) of Pareto's dualisms are conventional terms and a casual reader's initial response to conventional bi-lateral distinctions, such as the notions of *concrete* and *abstract* or *deduction* and *induction*, may well be to conclude that the methodological context of Pareto's equilibrium analysis largely conforms with that of his peers. However, a reading of Pareto which identifies the multiplicity of Pareto's conventional and unconventional dualisms, and their relationship with other sets of dualisms, reveals a different story: one where bi-lateral distinctions are important in the development of Pareto's most original contributions to equilibrium theory and the methodological context within which such theory developed. The thesis of this study is that ongoing and increasing use of dualistic distinctions helped facilitate Pareto's shift in the treatment of social equilibrium from an aspect of applied economics to the subject of general social theory, and that this shift correlated with the explicit recognition and endorsement of a relativistic approach to science. A secondary goal is to indicate when dualistic distinctions serve the purpose of suggesting a balance between bilateral concepts and/or phenomena.

Section 2 outlines the context of this study. It identifies the three key dualistic distinctions in Pareto's methodology that enabled social phenomena to be treated within a general theoretical framework (namely the relationships between *fact* and *theory*, *subjective* and *objective* phenomena and the *intrinsic* and *extrinsic* aspects of theory). It also outlines the hypotheses of this study. Section 3 explores the *fact-theory* dualism, and associated dualisms, in enough detail to establish the scope of pure and applied economics in the period up to and including the 1896-97 *Cours d'économie politique*, and the subsequent re-casting of general equilibrium theory in the 1900 "Sunto di alcuni capitoli di un nuovo trattato di economia pura del Prof Pareto", suggesting that this constituted the first step towards a modification in methodology which would ultimately accommodate the treatment of social equilibrium within a generalised theoretical framework. Section 4 examines the remaining methodological developments that finally accommodated social phenomena within a general theory of social equilibrium. Particular emphasis is placed on the role of *subjective-objective* and *intrinsic-extrinsic* dualisms and the explicit endorsement of a relativistic approach to scientific theory. Section 5 further considers Pareto's relativistic approach to science by focusing on constraints associated with the aspect of utility. The use of dualistic distinctions in the development of a general theory of social equilibrium, especially in regard to the classification of theoretic elements and illustration of the relevance of theoretical elements, is examined in Section 6, as is the use of dualisms as a means of illustrating a balance between social forces. The paper concludes in Section 7 by finding that Pareto's unique and original contributions to equilibrium theory were generally facilitated by his capacity to employ successive dualisms. Even Pareto's mode of thinking on economic and social matters appears to have been characterised by successive and varied dualistic contrasts.

2) Contextual Information

While Pareto used dualistic distinctions to develop theoretical instruments, their significance was also important for the development of his scientific methodology. In its mature form, Pareto's methodology is based on three fundamental dualisms: the

specification of science in terms of a relationship between *facts* and *theories*; the specification of social phenomena in terms of two interdependent forms, the *objective* and *subjective*; and the need to investigate both the *intrinsic* and *extrinsic* aspects of theories, where the *intrinsic* concerns the soundness of theory in terms of its relationship to facts and the *extrinsic* concerns the relationship between a theory and society collectively without regard to the theory's intrinsic merit.

Of these dualisms, only the relationship between *facts* and *theories* spans the period from the 1894 “Prelezione al corso di economia politica”¹ (Pareto [1894] 1980) to the 1920 *Fatti e teorie* (Pareto [1920] 1980).² The remaining two emerged progressively as Pareto gave increasing consideration to theoretical sociology. While the *objective* and *subjective* aspects of phenomena are considered in the *Cours d'économie politique* (Pareto [1896-97] 1971), the need to examine the ongoing interdependence between the *objective* and *subjective* forms was effectively suppressed from pure theory to facilitate analytical deduction, and did not re-emerge for investigation until the 1900 “Un applicazione di teorie sociologiche” (Pareto [1900] 1980). Similarly, the distinction between *intrinsic* and *extrinsic* aspects of theory emerged over many years, although the importance of this dualism to the construction of a general theory of social equilibrium was not established until the *Trattato di sociologia generale* (Pareto [1916] 1935).

This study considers the above, and related, dualisms to test the hypotheses that: (i) Pareto initially made use of dualistic distinctions to define the legitimate scientific limits of a pure theory of economic equilibrium that is deduced from a hypothetical postulate, and to define its relationship to applied economics; and (ii) he then proceeded to make increasing use of dualisms over the rest of his academic career as part of his attempt to develop a general theory of social equilibrium which was not deduced from a hypothetical postulate, but developed from an *inductive-deductive-inductive* methodological sequence. This study also demonstrates that dualisms played a critical role in facilitating the methodological change necessary for the treatment of social equilibrium to shift from applied economics to general and relativistic theoretical sociology, classifying many of the various elements of social equilibrium theory and illustrating the relevance of these theoretical elements for an understanding of society.

3) *Fact-Theory* and Economic Equilibrium

The basic *fact-theory* dualism was initially introduced by Pareto to emphasises that one element of the dualism is the independent point of reference (facts) for the other (theories). While this view was subsequently modified by the recognition that theories may also influence conduct or fact (as discussed in Section 4), Pareto consistently presented social laws or theories as general uniformities derived from observed facts. He also consistently attributed this view to the natural sciences, as noted in his jubilee speech to the University of Lausanne:

¹ “First Lesson of the Course in Political Economy”, originally published in the *Gazette de Lausanne* under the title “Discours de M. Vilfredo Pareto”.

² The relationship between facts and theories is actually implied much earlier than 1894, such as in “Della Logica delle Nuove Scuole Economiche” (Pareto [1877] 1980) and is further expounded even later than 1920, such as in “Previsione dei Fenomeni Sociali” (Pareto [1922] 1980).

“The principal purpose of my studies has always been to apply to the social sciences – of which the economic sciences are only a part – the experimental method that has given such brilliant results in the natural sciences” (Pareto [1917] 1980, p.688).

To achieve this goal in economics, Pareto initially developed a methodological framework that accommodated pure theory deduced from the hedonistic postulate. The schema to accommodate this was based on a number of conventional dualistic distinctions, namely the *analysis-synthesis* distinction and the *concrete-abstract* distinction. In the “Prelezione al corso di economia politica”, analysis considers facts related to isolated phenomenon while concrete phenomenon is the subject of a synthetic re-unification based on analyses of the isolated social phenomena that comprise the concrete phenomenon. However, it was not until the *Cours d'économie politique* (Pareto [1896-97] 1971) that a distinctly Paretian methodological aspect emerged, where the dualistic distinctions between *theory* and *practice* and between the *general* and *particular* points of view were employed to introduce a fundamental distinction between the *primary* and *secondary* characteristics of facts.

“If we wish to consider a concrete fact, all ... sciences must be taken into account because they have been separated through a process of abstraction... practice differs from the theory because practice must take into account a number of secondary characteristics. The relative importance of primary and secondary characteristics is not the same from the general point of view of science and from the particular point of view of a practical operation.” (Pareto [1896-97] 1971, p.646)

In short, Pareto differentiated between types of facts, where facts that related to *primary phenomena* were regarded as fundamentally important and facts that related to *secondary phenomena* were considered of secondary importance. ‘Concrete’ phenomena are deconstructed through abstraction to various ‘primary’ phenomena that are the subject of study in specific disciplines within the social sciences. The primary phenomena of different disciplines are interrelated and the same facts may be interpreted from a different theoretical perspective, depending on the particular principal phenomena under investigation. Synthesis within disciplines (pure and applied studies) and between disciplines is required for principal phenomena to be reconstructed into the concrete phenomenon.³ Pareto refers to this as successive approximations (Pareto [1896-97] 1971, p.140), which he continued to endorse through to the *Trattato di sociologia generale* (Pareto [1916] 1935, p.37).

Importantly, only primary phenomena are subject to the *general* perspective of science. Pareto specified in the *Cours* that economic equilibrium is the primary phenomena of economics, resulting in a division between a highly constrained pure economics and a very broad applied economics that is currently not well appreciated.

While Pareto’s pure economics examines the properties of general economic equilibrium, it does not consider the transition to equilibrium. Instead, the transition to equilibrium is classed as a secondary economic phenomenon and, as such, is indirectly dealt with in applied economics. Pure theory is simply concerned with the state of economic equilibrium, and the extent to which theoretical equilibrium accords

³ Guala (1998) and Bruni (2002) describe this as Pareto’s “method of analysis-synthesis”.

with economic facts. The dualism between *homo æconomicus* and *real man* (that Pareto introduced in “Lasciate fare lasciate passare” (Pareto [1891] 1974)) is complement in the *Cours* with an additional dualism; namely the well-known distinction between *ophelimity* and *utility*. Just as *homo æconomicus* abstracts from real man, economic *ophelimity* abstracts from economic *utility*, by removing the need to directly prospects from development and growth in material welfare from human conduct, and from *utility* in general, by removing the need to consider fluctuating influences on conduct and welfare from moral or ethical factors. The pure economics of the *Cours* is deduced from the hedonistic postulate and on the assumption that *homo æconomicus* acts only in response to the force of *ophelimity*, where *ophelimity* is the pleasure derived from the relationship between man and things.

To clarify the role of deduction in pure economic theory, Pareto introduces a dualistic distinction between the *deductive method* and the *metaphysical method*. Both methods involve hypothetical deductions; the deductive method requires that deductions are considered with reference to observed fact, and the metaphysical method only requires that deductions derive from ‘principles’ without necessarily considering their relationship to fact (Pareto [1986-87] 1971, p635). In regard to pure theory, Pareto rejects the metaphysical method and accepts the deductive method.⁴

However, contrary to contemporary classifications, the role of hypothetical deduction in the pure economics of the *Cours* does not extend to deductions derived from the system of equilibrium economics. For example, deductions based on an application of general equilibrium theory have some practical relevance (eg. policy relevance to Government) and are considered an application of pure economics. It is particularly relevant that the analysis in the *Cours* on matters that are now known as the first and second laws of welfare economics are included in the chapters on applied economics, not the section dealing with the principles of pure economics. Consequently, mathematical economics should not be confused with pure economics in Pareto’s system. While mathematical economics is theoretical, it concerns either pure theory or applied theory. Similarly, institutional elements of theory, such as monetary theory and banking, typically considered today as pure theory, were also treated by Pareto as applied economics, probably because such factors are beyond the strict definition of the equilibrium system even when theoretical propositions are involved.

The pure theory of the *Cours* is, therefore, concerned solely with static equilibrium and its characteristics. Movement, be it virtual movement from an equilibrium point or real movement observed inductively, is treated in applied economics. The scope of applied economics includes results with theoretical implications from deductions considering the impact of movements (with or without reference to social institutions) to empirical studies and historical studies of social selection and evolution. To illustrate the broad scope of applied economics implied under the structure of the *Cours*, it is relevant that Pareto’s first major study in political sociology *Les Systèmes socialistes* (Pareto [1901-02] 1974) was taught within the applied

⁴ Of course, given Pareto’s emphasis on the relationship between fact and theory, he emphasises that deductive studies and inductive studies in political economy must supplement each other (Pareto 1897). The importance of the deductive and inductive methods in light of Pareto’s contact with Giovanni Vailati is examined by Bruni (2002).

economics program at the University of Lausanne⁵, with the most original theoretical contributions in this important work focussing on social selection and evolution.

Economists have generally not appreciated the limited scope of Pareto's pure economics and the broad scope of his applied economics, especially the proposition that applied theory is an aspect of applied economics. For example, in his book the *Economics of Vilfredo Pareto*, Renato Cirillo laments that in the *Cours*, "out of about 800 pages not more than 75 are concerned with pure theory. The presentation is chaotic... and no one so far has given a satisfactory explanation as to why he calls the second part 'applied economics'⁶" (Cirillo 1979, pp.17-18). In contrast to Cirillo, Pasquale Boninsegni, Pareto's successor at the University of Lausanne, saw considerable merit in the differentiation between pure and applied economics outlined in the *Cours*, and tended to work within these distinctly Paretian bounds.⁷

Subsequent to the *Cours*, in the recently rediscovered "Sunto di alcuni capitoli di un nuovo trattato di economia pura del Prof Pareto" (Pareto [1900] 1982)⁸, Pareto specified pure economics based on two different approaches; the deductive method of the *Cours* and a new 'choice' approach developed from a dualism between the experimental notions of *choice* and *obstacles* to choice. Importantly, the "Sunto" demonstrated that the same equilibrium result could be achieved by using either the deductive method employed in the *Cours* (provided that ophelimity is represented as a quantity that can be measured) or an alternative sequence which does not require the quantification of ophelimity, only the ordering of preferences. The alternative methodological sequence in the "Sunto" involves three distinct stages: induction (to experimentally determined preference ordering of indifference curves); deduction (to establish equilibrium based on the relationship between preference ordering and obstacles associated with choice); and induction (to confirm equilibrium through observation of constant and repeat actions under given circumstances). Subject to the principle phenomenon in economics being revealed by constant and repeated choice in unchanged circumstances, Pareto was able to use the dualism between *choice* and *obstacles* to choice to demonstrate the equivalence of pure economic theory deduced from: (i) a hypothetical postulate, involving a *deductive-inductive* methodological sequence utilised in the *Cours*; and (ii) inductively determined preferences, utilising the *inductive-deductive-inductive* methodological sequence employed in the "Sunto".⁹

⁵ Fiorenzo Mornati (1999) indicates in *Pasquale Boninsegni e la Scuola di Losanna* that Boninsegni (Pareto's protégé at Lausanne) presented classes on *Les Systèmes socialistes* as part of the applied economics program.

⁶ The second book of the applied economic section is entitled "The economic organism", which considers matters as diverse as the general principles of social evolution and the foundations of welfare economics.

⁷ The influence of Pareto's *Cours* on Boninsegni is considered in *Pasquale Boninsegni e La Scuola di Losanna* (Mornati 1999).

⁸ The importance of the "Sunto" from economic and methodological perspectives is discussed in Georgescu-Roegen (1975) and more recently by Marchionatti and Gambino (1997) and Bruni and Guala (2001) and Bruni (2002).

⁹ The author is indebted to Fiorenzo Mornati and Roberto Marchionatti for pointing out that Pareto's "Considerazioni sui principii fondamentali dell'economia politica pura" (Pareto [1892-93] 1982) also accommodates an *inductive-deductive-inductive* methodological sequence. In this regard, the sale of goods at various prices is an observed fact (induction), the theory of value is deduced from hypothetical postulate to explain these observed facts (deduction) and the deduced theoretical outcomes of value theory are then either discarded, accepted or modified depending on its concordance with observed evidence (induction). However, a significant difference in the method of deduction employed in these two works remains, with the "Considerazioni sui ..." presenting theoretical deductions from a

While Pareto regarded the specification of equilibrium theory in terms of choice as the more scientific of the two approaches, Pareto continued to employ the deductive method when considering virtual movements away from equilibrium states (McLure 2003). Consequently, given the division between pure and applied economics outlined in the *Cours*, deductions from an hypothetical postulate continued as an important mode of enquiry in applied economics.

The *choice* and *obstacle* dualism in the “Sunto” is modified slightly in the *Manuale di economia politica* (Pareto [1906] 1974), where general equilibrium is recast as a system of opposing forces associated with *tastes* and *obstacles*. Like the balance between choice and obstacles, the greater level of theoretical generalisation in the *Manuale* complements Pareto’s use of the mechanical analogy, as general equilibrium is primarily considered in terms of a balance between two opposing forces, whereas in the *Cours*, exposition places more emphasis on the separate study of exchange, production and capitalisation.¹⁰ The *Manuale* is also important for further clarifying the limits of pure economics, by suggesting that pure equilibrium economics only deals with logical and repeat actions to procure goods and satisfy tastes under the condition that the subjective fact ‘conforms perfectly’ with the objective fact (Pareto [1906] 1974, p.105). The significance of this ‘perfect confirmation’ is considered further in Sections 4 and 5.

4) Objective-Subjective Form and Intrinsic-Extrinsic Elements of Theory

To treat social equilibrium within a general theoretical framework, as opposed to the applied framework of the *Cours*, Pareto progressively modified his methodology by de-emphasising the association between pure theory and hypothetical deduction. The demonstration in the “Sunto” that pure theory deduced from inductive data is equivalent to pure theory deduced a hypothetical postulate was the first major methodological step towards accommodating social phenomena within a general theoretical context. The next major step came with Pareto’s recognition that the *inductive-deductive-inductive* methodological sequence provides a mechanism for treating social change within a general theoretical framework even when deduction from hypothetical postulate is unable to identify social laws that accord with fact. To arrive at this position, Pareto again employed dualistic distinctions, and the concepts associated with these distinctions, to emphasise a relativistic approach to science.

Pareto’s investigation of the constraints on pure theory associated with *subjective* and *objective* purpose proved to be a crucial dualism, as it ultimately lead to Pareto’s unique bi-lateral distinction between logical and non-logical aspects of conduct. The importance of the *objective-subjective* dualism for sociology was first notable in his 1900 “Un applicazione di teorie sociologiche”:

“...each sociological phenomenon has two distinct, and often diverse, forms. They are an objective form, which determines the relation between real objects, and a subjective form, which establishes the relationship

hypothetical postulate and the “Sunto” presenting theoretical deductions as deriving from observed preferences. This difference is important to the evolution of Pareto’s approach to economic and social equilibrium.

¹⁰ Amoroso (1949) reconciles the three sets of equations for general equilibrium in the *Cours* with the two sets of equilibrium equations for tastes and obstacles in the *Manuale*.

between psychological states. ... it is not enough to research the correspondence between the two phenomena, we are presented with a third problem, that is to understand how real phenomenon act to alter the subjective phenomenon and vice-versa” (Pareto [1900] 1980 p.181).

The dualistic *objective-subjective* distinction ¹¹ is important here because it marks an explicit recognition of the ongoing interdependence between the subjective and objective forms. Not only may subjective intent lead to conduct and an objective relationship, but observation of a change in an objective relationship may also influence subjective intent, which impacts upon subsequent action. This issue is of relevance to contemporary welfare economics, as when preferences are ordered (or utility measured) with respect to subjective phenomena, ongoing interaction between subjective and objective phenomena equates to interdependence between conduct and preferences, or endogenous preferences.

Interdependence, and a lack of interdependence, between the subjective and objective is also the basis of Pareto’s distinction between non-logical and logical conduct. Pareto first raises the distinction between logical and non-logical action in a letter to Maffeo Pantaleoni in 1897 (Pareto 1960 vol 2, p.73). However, the distinction was not defined, and non-logical action was simply associated with influences on social phenomena that have little or nothing to do with reason. In published work, the distinction is raised in the “Sunto”, but again it is only to note that *homo aeconomicus* undertakes logical action, not non-logical action (Pareto [1900] 1982, p.375-76). In “Sul fenomeno economico” (Pareto [1900] 1999) the phrase non-logical action is again used, this time to acknowledge that non-logical factors influence economic choices and reiterate that such influences are beyond the scope of pure economics. Logical and non-logical distinction was subsequently raised in many other publications. Important among these is the discussion of the relationship between logic and objective and subjective connections between things in “Programma e sunto di un corso di sociologia” (Pareto [1905] 1980, pp302-03) and the general discussion in the opening chapters of the *Mauale di econmia politica* (Pareto [1906] 1974).

However, the clearest definition of non-logical action, which was first provided in “Le Azioni non logiche” (Pareto [1910] 1980), derives directly from the dualistic *objective-subjective* distinction. Logical action must not only logically connect means to ends, but also the subjective end of action must be identical to the objective end. When experimental observation confirms that the subject and objective forms conform perfectly (through constant and repeat action in unchanged circumstances) subjective preferences are unaffected by objective phenomena and such conduct is classed as logical. Conversely, when the objective path intended to connect means to ends causes a divergence between the subjective and objective ends, subjective intent and objective end alter with conduct, and such action is non-logical.¹² When experimental observation establishes that, when circumstances are unchanged and

¹¹ Also referred to as a dualism between psychic states (or things A) and physical states (or things B) in “Il metodo della sociologia” (Pareto[1906] 1980, p.284-85). In the subsequent “L’economia e la sociologia dal punto di vista scientifico” the same issue is raised but in the context of the ‘two aspects’ from which facts should be studied, namely the study of: 1) facts in themselves; and 2) the received impression of facts across people (Pareto [1907] 1980 p.342).

¹² Other forms of non-logical contact identified by Pareto, but largely dismissed as unimportant (in terms of the relationship between fact and theory) include: action without subjective intent; and purely instinctive action or conduct without reason.

action is not constant and repeated, subjective preferences do not conform perfectly with objective phenomena and conduct is classed as non-logical.

The final major methodological change that permitted the development of sociology as general theory of social equilibrium based on endogenous preferences was the explicit acknowledgement of *intrinsic* and *extrinsic* aspects of theory. As noted in Section 2, the *intrinsic* aspects of theory concern the soundness of theory in terms of its relationship to facts while the *extrinsic* concern the relationship between a theory and component members of the general community without regard to the theory's intrinsic merit. From the perspective of social science, Pareto argued that "Both methods, if used exclusively, are equally incomplete." (Pareto [1916] 1935, pp.503-04).

The crucial aspect of this dualism for Pareto's methodology is that social theories and doctrines came to represent the initial data from which a general theory of social equilibrium could be developed, with analysis of the extrinsic and intrinsic aspects of theories providing the instrument through which regularities associated with the ongoing interdependence between objective and subjective phenomena are analysed.

Bruni (2002, p.40-41) demonstrates that Pareto's concern with isolating two perspectives on theory dates back at least to 1898, citing a comment by Maffeo Pantaleoni that Pareto considers theories both intrinsically and in regard to those who create it and welcome it. The *intrinsic-extrinsic* distinction is also implicit in the *Les Systèmes socialistes* (Pareto [1901-02] 1974), where theories of scientific socialism (eg. Marxism) are differentiated from religious socialism (e.g. religious doctrines) and also metaphysical socialism (e.g. utopian visions of ethical socialism). However, the relevance of this relationship to the development of general theory was not evident to Pareto at that stage, with the original work in the *Systèmes* focussing on inductive laws associated with imperfect social evolution. It was not until the *Trattato* that observable data on the relationship between the extrinsic and intrinsic aspects of theories and doctrines were treated as primary data on the interdependence between subjective and objective phenomena, from which general theory of social equilibrium could be deduced and then subject to verification.

Consequently, even though ongoing interaction between subjective and objective phenomena prevented the derivation of general social equilibrium theory from hypothetical deduction based on behavioural postulates, Pareto was able to utilise the *inductive-deductive-inductive* approach to science that first appeared in the "Sunto" to shift the focus of scientific treatment of social equilibrium from applied economics to general social theory. Specifically, theories and doctrines were subject to inductive categorisation and description, general sociological theory was established by deduction (in large part based on observed regularities associated with the extrinsic and intrinsic aspects of theories and doctrines) and finally both inductive categorisation of social phenomena from theories and doctrines and deduced theory were verified by inductive analysis of historical experience. The theoretical instruments for the study of social equilibrium developed in this manner are briefly discussed in Section 6.

Another, and also important, aspect of the *intrinsic-extrinsic* dualism is that it qualifies the *fact-theory* dualism (as outlined in Section 3, where fact is regarded as an independent point of reference for theories). As the subjective forms of theory have

extrinsic consequences that alter human conduct through interaction between subjective and objective phenomena, theories and doctrines, and their impact on conduct, become social facts that must be treated in general sociology.

The *subjective-objective* and *intrinsic–extrinsic* dualisms also combine to clarify the relativistic aspects of Pareto’s approach to science. This is perhaps not surprising as a dualistic distinction is, in itself, a relative instrument, with each element of the dualism contrasting with the other. In the *Trattato*, the dualistic *subjective-objective* distinction is clarified with the acknowledgement that all knowledge is really subjective, except that objective knowledge has, in relative terms, a low level of subjectivity (Pareto [1916] 1935, pp.76-77). In this way, it is possible to consider the progress of scientific knowledge, where the current level of ‘objective’ knowledge is a benchmark or reference point for assessing scientific progress over history. Pareto also recognised that knowledge from experimental observations is constrained to the “limits of time and space known to us” (Pareto [1916] 1935, p. 51).

To emphasise the relativistic limits of scientific knowledge which dualisms helped create, Pareto (in the ‘index-summary of theorems included at the end of the *Trattato*) set out a detailed and extensive dualistic comparison of *logico-experimental* and *non-logico-experimental* theories. He concluded that:

“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).

Logico-experimental science does not deal in certainties because experimental uniformities are assessments made in relation to principal phenomena (as outlined in the *Cours*), and ‘interferences’ between laws for related principal phenomena influence objective facts. To manage the impact in interferences between social laws, Pareto introduced a dualism between *general* and *special* sociology,¹³ where the *Trattato* is a general sociology that analytically and synthetically investigates the general forms of society and special sociology considers the particular forms of various social phenomena. However, the management of interferences between social laws for various primary social phenomena is achieved synthetically not analytically, with Pareto introducing the dualistic *absolute-relative* distinction to clarify that “the absolute has no place in logico-experimental science, and we must always take in a relative sense propositions that in the dress of ordinary parlance seem absolute” (Pareto [1916] 1935 p.57).¹⁴

While the role of subjectivity in Paretian relativism provides for progress in scientific knowledge to be considered, it denies the possibility of assessing progress in subjective knowledge. However, subjective knowledge associated with social

¹³ Which itself has routes in the Paretian distinction between ‘la forma’ (form) and ‘il fondo’ (foundation, or substance) of sentiments introduced in the *Sistèmes* ([1901-2] 1974 pp.229-30).

¹⁴ On the same issue, Pareto then goes on to note: “that much being clearly grasped, any misunderstanding is impossible, whereas to express ourselves with absolute exactness would be to wallow in lengthy verbosity as useless as they would be pedantic.” (Pareto [1916] 1935 p.57)

theories and political manifestoes can have extrinsic (positive or negative) benefits to society, or sub-sets of society, and the extrinsic merits of subjective ideas for society can be considered by logico-experimental sciences, although only within the relativistic limits of the aspect of utility, which is discussed in Section 5.

5) The Aspect of Utility and Relativism

The dualistic distinction between *ophelimity* and *utility* has been considered extensively in the historical and secondary Paretian literatures.¹⁵ However, the relativistic context of the aspect of utility has not been considered in light of the discussion in Section 4.

Ophelimity in its economic context is pleasure (in the *Cours*) or the less hedonistic notion of tastes (in the *Manuale*). The important feature of ophelimity for the purposes of this study is that it is a yardstick for representing the relationship between man and things (economic goods), but only when the objective end of action conforms perfectly with the subjective end. In contrast, utility refers to the benefit from conduct when subjective intent is interdependent with objective action, suggesting that utility, or preferences, are modified with conduct. It is therefore ironic that, unlike Pareto's contribution to the theoretical study of economic equilibrium derived from the concept of ophelimity, the importance of his general sociological theory of social equilibrium, especially its relevance to welfare studies based on endogenous preferences, is still largely unrecognised by historians of economic thought.

Welfare propositions associated with maximising ophelimity and maximising utility are very different in Pareto's system of analysis. The well known proposition that free competition is Pareto optimal is, within Pareto's work, confined to the context of ophelimity. In the *Trattato*, this situation is characterised in reference to a dualistic distinction between the *maximum of ophelimity for the community* and the *maximum of ophelimity of each individual in the community*, with Pareto's analysis demonstrating that these two maxima correspond (ie. for the community and the individual) at a point of competitive equilibrium. However, Pareto also utilised a dualistic distinction between the *maximum of utility for the community* and the *maximum of utility of the community*. In both instances, each individual is assumed to weight their utility from their own conduct as well as from the conduct of other members of society (individual's social preferences). To maximise utility from the perspective of the collective, Government's can identify and weight individuals' social preferences and either maximise *utility for the community* (by introducing policies that maximise welfare subject to the constraint that no one is harmed) or maximise *utility of the community* (by introducing policies that maximise welfare without the constraint that no one is harmed).

Importantly, instead of considering utility as a relationship between a person and things, which is the case when ophelimity is considered, utility primarily depends on individuals' propensity to *observe* or *violate* precepts prevailing in society (Pareto

¹⁵ Including Fisher [1896](1999), Spirito (1978), Hutcheson (1953), Tarascio (1968), Freund (1994), McLure (2001) Bruni (2002).

[1916] 1935 p.1473-4)¹⁶. This allows social equilibrium to be considered with respect to the relationship between conduct and social norms, and directly links utility with Pareto's notion of residues (which are discussed in Section 6). When an individual's personality is such that their utility is greatest when he or she acts outside of prevailing social norms, then under Pareto's approach, the individual will act in a non-conformist manner, at least to the extent permitted in the presence of (generally social) obstacles to such conduct. Conversely, when an individual's personality dictates that their utility is greatest when he or she acts within the prevailing social norms, then the individual will act in a conformist manner, at least to the extent permitted by (generally social) obstacles to such conduct.

By specifying social equilibrium at this general level, which clearly lacks the precise determinism of pure economics, Pareto was able to undertake analysis which accounted for the impact of ongoing interaction between subjective and objective phenomena without resorting to false determinism. In this regard, utility varies with the degree of conformity and non-conformity of individuals' conduct, not the particular form of the (potentially infinite) variations in the types of non-conformist conduct.¹⁷ If utility were to be considered in unique relation to each particular form of conduct, a false determinism would re-emerge that would be analogous to the misspecification of economic equilibrium based on exogenous preferences when experimental observation confirms that preferences should be treated as endogenous.

Pareto's different approach to welfare in economics and sociology also has very important implications for his relativistic approach to science. Statements about welfare deduced from pure economic theory are essentially unconstrained because people and their tastes for things are represented, through the notion of ophelimity, as stable and unchanging over time.¹⁸ In contrast, statements about welfare deduced from general sociology are only valid when considered relative to prevailing social precepts when such precepts endure. When social change associated with ongoing interdependence between the objective and subjective phenomena causes social precepts to alter, the implied unit in which utility is measured also alters.

¹⁶ Although it must be acknowledged that in "Il massimo di utilità per una collettività in sociologia" (Pareto [1913] 1980), written 3 years before the *Trattato* was published, this distinction (whereby ophelimity focuses on the relationship between people and things and utility focuses on the relationship between behaviour and prevailing social precepts) was not explicit. Aspects of the distinction are implied in the discussion of welfare and crime and punishment, but the association between utility and conduct was not directly considered. However, this article concludes by noting that the analysis was aimed "at taking the first step in the theory of social utility" (Pareto [1913] 1980, p.605). Subsequent steps, especially the explicit treatment of utility as a relationship between behaviour and its variation from prevailing social precepts, were taken in the examination of social equilibrium in *Trattato*.

¹⁷ Nevertheless, it should not be inferred that Pareto's notion of utility is unrelated to the benefits associated with the relationship between people and things, as this is an aspect to the broader relationship between individual conduct, group conduct and normal social precepts. For example, 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. Pareto, to some extent, even analysed the link between conduct and things through the use of the *rentier-speculator* and *fox-lion* dualisms, which are briefly discussed in Section 6.

¹⁸ The only constraint is practical, as the notion of ophelimity is generally limited to circumstances where there is no interaction between the objective and subjective phenomena, or where such interaction is modest and does not prevent the pure economic theory from being a good 'first approximation' to equilibrium.

Consequently, utility as a quantity is specific at a given state and time, and conclusions on the maximisation of welfare in sociology are limited to circumstances where social equilibrium at this state and time is stable (or when any change in the form of social equilibrium has no impact on prevailing social precepts). When ongoing interdependence between subjective and objective phenomena alters prevailing social precepts, utility alters and is incapable of indicating whether action is welfare enhancing or welfare diminishing. For example the aspect of utility in Pareto's scheme could not be analysed to indicate whether a change in the degree of social centralisation (and the consequent change in both social precepts and the degree of conformity with altered precepts) would enhance or diminish welfare.

Fundamentally, the variability associated with the aspect of utility is likely to become greater over time, thereby ruling out any possibility that analysis of utility would provide a basis for making judgements on social progress. As purely subjective judgements do not constitute logico-experimental findings (as there are no criteria by which progress in subjective knowledge can be assessed), only partial indicators of progress are available from objective phenomena. For example, within the Paretian system, it is possible to examine changes in the standards of living and productive capacity over time (Pareto [1916] 1935, p.1578), as these are essentially observable. However, it would be illegitimate to equate such observations with social progress, as that would rely on either: a subjective presumption that material progress is the same as social progress; or use of the aspect of utility in a manner that exceeds its scientific limitations.

6) General Theory of Social Equilibrium

Concurrent with the methodological modifications reviewed in Section 4 to accommodate broad social phenomena within a general theoretical framework, Pareto progressively created his general theory of social equilibrium, an original and watershed development relative to his treatment of social equilibrium within the *Cours* as applied economics. In this Section, Pareto's progress from economics to sociology is not charted *per sé*, as such research has already been published.¹⁹ Instead, the role of dualisms in the development of Pareto's general theory of social equilibrium is reviewed.

Pareto's general theory of social equilibrium only fully emerges in the *Trattato*. It is based on four analytical elements: interests; elites; residues; and derivations, with social equilibrium considered synthetically based on the interaction between each of these elements. The primary goals of the general sociology are to consider the stability and instability of social equilibrium and consequent implications for social movement.

The interests and elites elements of social equilibrium predate Pareto's work on the intrinsic and extrinsic aspects of theories. Interests concern the impact of material interest on social phenomena, and elites concerns the interaction between *elite* and *non-elite* elements of economic and other, mainly political, social groups. Both these elements have their origins in economics. 'Interests' is essentially another term for the subject of pure and applied economics. Elite conduct derives from the applied

¹⁹ See for example Busino 1989 (pp.363-84).

study of evolution and social selection in Pareto's applied economics, commencing in the *Cours* and culminating in the *Systèmes*, where interaction between political and economic elites is correlated with what Pareto calls public 'spoliation' (destruction of collective wealth as a consequence of alignments between economic and political elites to appropriate property of non-elites and sometimes competing elites).

Pareto illustrated the interaction between interests and elites in 1911 in "Redditi e speculatori", which introduces the dualistic *rentiers-speculators* distinction.

"From an abstract and scientific point of view, one can distinguish 'the saver', who lives solely on the interest from his savings, and the 'entrepreneur', who offers the services of savings and other forms of capital ... From a concrete point of view, we must instead consider two types...The first category [rentier] is largely conservative, hostile to change, a little fearful, patriotic and nationalistic. The second category [speculators] is, to the contrary, innovative and, above all, sniffs out opportunities to realise good returns" (Pareto [1911] 1980, p.416).

In contrasting the saver and entrepreneur from the abstract and scientific point of view with the rentier and speculator from the concrete point of view, Pareto was laying the foundation for focusing on conduct and behaviour as a basis for examining interaction between objective and subjective phenomena. In this regard, the *speculator-rentier* dualism contrasts conservative and innovative attributes of economic actors in all spheres, not simply those who receive unearned income or seek rents, to provide a behavioural dimension to the study of concrete economic phenomenon that is not evident from pure theory. As such, the *speculator-rentier* eventually becomes a useful analogy for illustrating the psychological basis for the *residues-derivations* dualism, and its impact on social equilibrium.

The dualistic *residues-derivations* distinction derives directly from the study and classification of the intrinsic and extrinsic aspects of written social theories and doctrines. Derivations concerns the general uniformities observable from written theoretical rationalisations that derive from subjective propositions,²⁰ and *residues* concern regularities associated with the residua of subjective element of theories that are included explicitly or implicitly in theories, but not necessarily included in the quasi-rationalisation of subjective propositions.

As derivations take many different forms, they are a *variable* aspect of non-logic that is evident from the variety of rationalisations in theories. In contrast, residues are the *constant element* evident from implicit and explicit sentimental aspects of written theories. From this finding, Pareto hypothesises that the regularities evident with residues and derivations established from observations of written theory can also be observed in human behaviour. That is, residues also act as a constant force on human conduct and derivations act as a variable force on human conduct.

Pareto's classification of residues, based on an examination of the intrinsic and extrinsic aspects of theories, yielded six classes of residues. However, in developing

²⁰ As noted by Busino (1989, p.372), the 1900 "Un'applicazione di teorie sociologiche" marks Pareto's first published recognition that man takes pleasure in explaining his actions with principles and, after the event, imagining that he has justified those actions (Pareto [1990] 1982, p.179).

his general theory of social equilibrium, only a dual classification of residues was used, Class I residues – *instinct for combinations* and Class II residues – *persistence of aggregates*.²¹ A person with a dominant propensity to seek a change to the prevailing combinations of relationships between people, ideas, and things is classed as a person with a relative dominance of Class I residues. In contrast, a person with a dominant propensity to preserve prevailing relationships between people, ideas and things is classed as a person with a relative dominance in Class II residues.

Dualistic subclasses are also introduced within the main classes of residues and derivations. In regard to Class I residues, combinations apply between *similars* and *opposites* (likeness and opposites, unusual things and exceptional occurrences, association of felicitous state with good and infelicitous state with bad). Class II residues are, in part, subdivided into a contrast between the persistence of relations between a person and other people, people and places, the living and the dead, and the dead and the belongings of the dead. Dualisms are also used for didactic and definitional reasons when derivations are considered. For example, dualistic distinctions are introduced for *derivations-facts*, *derivations-sentiments*; *derivations-metaphysical entities*; *derivations-supernatural entities* and *derivations-reality* as a means of clarifying, and indirectly defining, the sociological meaning of the term derivations. To further illustrate the characteristics of derivations Pareto used a range of dualisms, some of which are shown in the Table 1 of the Appendix.

Pareto's earlier *rentier-speculator* distinction is introduced in the *Trattato* as a means of explaining the synthetic union of Class I and Class II residues with interests, elites, and derivations in heterogenous collectives. This is because the personality profiles associated with individuals rich in Class I residues and Class II residues complement the *speculators-rentiers* dualism, and illustrates the interaction between his four theoretical aspects that are united synthetically to determine whether social equilibrium is stable or unstable. The illustration of the general theoretical syntheses is given further depth by introducing a *fox-lion* dualism for political elites; with the indirect and cunning action associated with *foxes* and direct and forceful action associated with *lions*.

In the 1922 *Trasformazione della democrazia* Pareto clarifies a key objective of the synthetic theory of social equilibrium by introducing a dualistic distinction between *state's rights* and *individual's rights* (Pareto [1921] 1982, p.926). When this is recognised, the four elements of Pareto general sociology interact to create a (stable or unstable) balance between dual and opposing forces, namely the *centripetal forces* (to increase the central authority in the State) and *centrifugal forces* (to increase the authority of decentralised groups and individuals). The general theory of social equilibrium may therefore be presented as: (i) specific analysis of interests, elites, residues and derivations to isolate the centripetal and centrifugal forces in society, and (ii) synthetic unification of these analyses to establish whether the net impact of these forces is to stabilise or de-stabilise the prevailing equilibrium between state and individual authority, and the related matter of any consequent variation in the form of stable or unstable social equilibrium.

²¹ However, many attributes of the remaining classes of residues can be derived when utility profiles of people dominated by Class I and Class II residues are defined and preferences for individual's rights and states' rights considered (see McLure 2001).

Two consequences of Pareto's reliance on dualistic distinctions in the development of the analytics of the general sociology and the general synthesis of these analytics to consider social equilibrium are: (i) a perception that phenomena, and aspects of the analytics of phenomena, constitute a balance of opposing forces; and (ii) a focus on crude 'proportions' to explain phenomena. The first point is supported by the dualisms cited in Table 2 in the Appendix, where the notion of balance in economic and social phenomena is implied in both the science (the analysis and the synthesis) and the description of economic and social phenomena that illustrate the relevance of the science. The second point is supported by the fact that, even though Pareto recognised that people's attributes vary by degree, which suggests that the full distribution of behavioural attributes are relevant influences on social equilibrium, he tended to group individuals into a series of contrasting dualistic categories (elites and non-elites, people rich in Class I residues and people rich in Class II residues, speculators and rentiers or foxes and lions). Pareto even concludes, in the main theorem at the end of the *Trattato*, that proportions derived from the dualisms on *Class I-Class II* residues and *elites-non-elites* (ie. ruling and subject classes) have enough explanatory power to be the main focus of studies into social equilibrium and the development of social forms.

“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).

7) Conclusion

In his letter to Benedetto Croce published in the *Giornale degli Econmisti* in 1900, Pareto noted that “from the large slice that you have cut off the concrete phenomenon, I have cut off yet a smaller slice which I mean to study” (Pareto [1900] 1982, p.225)²². At the time he wrote this comment, dualisms were primarily a mechanism for reducing the concrete phenomenon to a form that could be studied in pure theory based on an *inductive-deductive-inductive* methodological sequence when equivalent results in pure theory could be derived from the deductive method. Also at that time, Pareto regarded ongoing interaction between the subjective and objective form of society as an aspect of applied economics (which included the study of evolution and social selection) and not general sociological theory.

However, over the period between 1900 and 1916, dualisms were not only used to examine small slices of the concrete phenomenon, but also used to section new and larger slices of the concrete phenomena. This involved the adoption of the *inductive-deductive-inductive* methodological sequence, when the deductive method fails to achieve outcomes that accord with observed fact, to investigate the implications of the interaction between *subjective* and *objective* phenomena, and

²² Translated by F. Priuli in Pareto ([1900] 1999, p.246)

relying on regularities associated with the dualistic *intrinsic-extrinsic* distinction to develop a general theoretical framework for sociology.

The theory that developed within this new framework utilised dualisms in a number of ways. These include the classification of primary research data, the development of basic theoretical elements and illustration of these theoretical elements, such as the importance of equilibrium as a stable or unstable balance between opposing forces. A likely consequence of the use of dualisms to expand the scope of general theory was an increasing role assigned to relativism, with the aspect of utility contingent on the prevailing social precepts. Other important consequences of Pareto's reliance on dualisms is that they enabled him to highlight the role of balance in economic and social phenomena and to simplify analysis-synthesis by representing various proportions as indicators with a very significant explanatory power on the issue of social equilibrium.

Therefore, it is concluded that Pareto's unique and important contributions to equilibrium theory were made possible by his capacity to employ a succession of sometimes related and often distinct dualisms. Indeed, it could well be suggested that Pareto's own mode of thinking on economic and social matters was characterised by successive dualistic contrasts.

Attachment

Table 1: Examples of Dualisms that Illustrate Theoretical Elements

Dualisms	Theoretical Element	Aspect of theoretical Element illustrated
<i>Ophelimity and utility</i>	Economics	Limits of economic man
<i>Homo œconomicus and real man</i>	Economics	Limits of economic man
Elites and non-elites	Applied economics and later, General Sociology	The heterogeneous nature of the populations and authority of the few relative to the many
Residues and derivations	Elements of Social Equilibrium	Theoretical expression of the subjective phenomenon and interaction between the subjective and objective
<i>Class I and Class II</i>	Residues	Two fundamental classification of subjective influences
<i>Intensity and variations</i>	Derivations	Interaction between residues (intensity) and derivations (variations) on conduct.
<i>Voltaire and Lucian</i>	Derivations	That theories of equal literary and logical effectiveness may receive different receptions from the community, suggesting that derivations derive from residues and not the other way around.
<i>Justice and truth</i>	Derivations	How terms are associated in people's minds with sentiments.
<i>Virtue and happiness</i>	Derivations	The association of virtue with happiness in derivations, even when the terms are vague.
<i>The Popes and the Franciscans</i>	Derivations	The interaction between Class 1 and Class 2 residues in derivations.

<i>Faith and reason</i>	Derivations	That sentiment is common to different faiths when reasoning about the forms of competing religion suggests great differences between faiths.
<i>Catholicism and nationalism</i>	Derivations	To demonstrate the varying forms of competing religions.
<i>Humanitarianism and socialism</i>	Derivations	To demonstrate the varying forms of competing religions.
<i>The Keiser and the 'will of the people'</i>	Derivations	The use of derivations in politics that apply abstract meaning to the phrase 'the people' to influence the people

Table 2: Dualisms that infer 'balance' between Opposing Forces.

Dualism	Initial Published Source
<i>Choice and obstacles</i>	"Sunto"
<i>Tastes and obstacles</i>	Manuale
<i>Savers and entrepreneurs</i>	Redditieri e Speculatori (but implicit in the <i>Cours</i>)
<i>Rentiers and speculators</i>	Redditieri e Speculatori
<i>Elites and non-elites</i>	<i>Systèmes</i>
<i>Justice and compassion</i>	<i>Systèmes</i>
<i>Reason and interests</i>	<i>Systèmes</i>
<i>Reason and sentiment</i>	<i>Systèmes</i>
<i>Benevolence (of the strong) and cowardice (of the weak)</i>	<i>Systèmes</i>
<i>Foxes and lions</i>	<i>Trattato</i>
<i>Residues and derivations</i>	<i>Trattato</i>
<i>Class I and Class II residues</i>	<i>Trattato</i>
<i>Force and consent</i>	<i>Trattato</i>
<i>Centripetal and Centrifugal force</i>	<i>Trasformazione</i>

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