IMPARTIALITY AND INEQUALITY OF RESOURCES: EDGEWORTH AND UTILITARIANISM

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Abstract:

This paper aims at analysing Edgeworth's anti-egalitarian conclusions, which are based on utilitarianism and the hypothesis that individuals differ in their sensitivity to pleasure and pain. According to Edgeworth, the absence of perfect competition is a defining feature of the contemporary world. This necessitates the adoption of a principle of arbitration to reconcile conflicting individual interests. The purpose of this arbitration principle is to identify the means of achieving the greatest happiness, taking into account differences in capacity for pleasure and pain. However, the question remains as to what could motivate individuals to adopt the equilibrium point defined by utilitarianism.

Keywords: Edgeworth / Utilitarianism / Equality / Pleasure
Code JEL: B1 / B2 / B3 / B13 / B31 / D63

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1. Introduction

There is a longstanding question concerning whether or not utilitarianism is egalitarian. The hypothesis of diminishing marginal utility, present in the work of the founder of school, Jeremy Bentham, has often been appealed to by economists seeking to emphasise its "declared egalitarianism" (Salvat, 2020, 94); however, following Rawls's criticism, many other commentators have argued that, because of the desire to maximise the sum total of utilities, utilitarianism takes no account of distribution.

The aim of this paper is not to take sides in this discussion, but rather to analyse the way it has been approached by an author who claims that utilitarianism is the foundation of ethics, namely Edgeworth. Although his anti-egalitarian conclusions have often been emphasised (e.g. Hicks, 1983), Edgeworth simultaneously defends utilitarianism as a principle of arbitration. This principle allows for what Sidgwick (1884, 379) refers to as "impartiality": "Individuals in similar conditions should be treated similarly". Although Edgeworth's analysis has given rise to several studies, the role played in it by utilitarianism has not been widely explored. The situation is indeed little changed since Creedy's (1984, 609) assertion that "Edgeworth's attitude to utilitarianism … seems to have been neglected in the literature".

In fact, in addition to Creedy's, three other papers have indeed taken up this challenge: Alcouffe and Alcouffe (1998) explore the implications of Edgeworth's utilitarianism with respect to the issue of equality, while also critiquing the anti-egalitarian interpretation of his theory that predominates in the literature: they argue that this interpretation neglects the context, particularly the economic situation in Ireland and the development of eugenics, as

well as Edgeworth's own approach.[1] Cohen Kaminitz (2013, 488), meanwhile, insists on the unique nature of the relationship between utilitarianism and economics in Edgeworth's thought, contrasting it with the approaches of Mill and Jevons: while Edgeworth "put the two moral sciences, economics and utilitarianism, together under the one umbrella of 'mathematical psychics'", Jevons and Mill "shared the earlier tendency to keep the two subjects apart", since they adopted utilitarianism as a "meta-criterion for assessing economic policy" (*ibid.*, 500). Baccini (2025) offers a reconstruction of "the subtle links between Edgeworth's ethics, the foundations of utilitarian and economical calculus and the problem of the indeterminateness of contracts and arbitration". His article converges on some of my conclusions but presents the arguments in a different way, examining Edgeworth's works one by one ([1877]; [1879] and [1881]): it therefore offers – to use its own words – an "extended journey through Edgeworth's texts on distribution and economic choice", whereas my article proposes an overall reconstruction of Edgeworth's approach to equality.

Yet these articles leave several questions unanswered. In particular, they do not address Edgeworth's arguments concerning how to identify the categories of people who are to be treated less well so as to increase the general well-being; and they fail to address the question of what might persuade these individuals to accept the utilitarian principle of arbitration Edgeworth advocates.

To understand the role that Edgeworth assigned to utilitarianism, it is necessary to take his 1881 work, *Mathematical Psychics* as a starting point, for two closely related reasons. First, it is in this work that Edgeworth discusses at length the problem of the indeterminacy of exchange and possible ways to resolve it. Second, it is also there that he introduces the

[1] By contrast, Hicks (1983, 157) opens his article on Edgeworth by expressing certain reservations about his categorisation as an "Irish economist": "I am a little embarrassed by the task that has been laid on me, to speak of F.Y. Edgeworth in this series of lectures on Irish economists. I am not at all sure that he can be reckoned to have been an Irish economist. It is true that he was born in Ireland, and brought up in Ireland; but he rarely speaks of Ireland in his works. When one thinks, he is going to do so, he usually turns off to some other subject."

distinction between what he calls the “Economical Calculus” and the “Utilitarian Calculus”. After an opening part in which he defends the idea of an “affinity between moral science and accepted mathematical science” (1881, 1), the second part of the book turns to “The Calculus of Pleasure”, which is subdivided into two sections corresponding to these two types of Calculus (*ibid*., 15). It is the relationship between these two sections that reveals how utilitarianism attains impartiality. According to Edgeworth, the absence of perfect competition is a defining feature of the contemporary world. This situation makes it necessary to invoke a principle capable of arbitrating between conflicting individual interests (section 2). Such a principle is provided by utilitarian ethics, which seeks to determine the conditions under which the greatest collective happiness can be achieved, taking into account differences between individuals— particularly in their “felicific power,” that is, their “varying degrees of ability to obtain a greater quantity of pleasure … with the same quantity of material means” (1877, 181). Once these differences are acknowledged, Edgeworth is led to endorse a principle of regressive distribution: resources should be allocated preferentially to those already best endowed, on the grounds that they are more capable of converting means into pleasure (section 3). This conclusion rests on a strictly additive and mathematical mode of reasoning. It reflects a shift away from Mill and his predecessors, who grounded utilitarianism in a psychological account of individual pleasure—even while maintaining an aggregate perspective—to later approaches which, as in Edgeworth’s work, place primary emphasis on the formal maximisation of total welfare. However, this evolution does not eliminate a fundamental question: what leads individuals to accept the distribution resulting from the maximisation of aggregate welfare, or, in other words, what can induce them to accept the equilibrium point defined by utilitarianism (section 4)?

2. Reasons for and solutions to the indeterminacy of exchange

"The Economical Calculus investigates the equilibrium of a system of hedonic forces each tending to maximum individual utility" (Edgeworth, 1881, 15): in other words, economics assumes that each agent is guided by his or her own interests, regardless of the interests of others. Given this assumption, the question arises as to whether these various interests can converge and lead to an exchange solution. Edgeworth's analysis of this question resulted in the formulation of a theory that placed the concept of the indeterminacy of exchange, defined as a situation characterised by "an indefinite number of *final settlements*" (*ibid*., 19), at the centre of his approach. Several times he refers to the "evils" caused by the indeterminacy of exchange (e.g. 1881, 20, 29, 51) (2.1). However, what seems to interest him most is that, when faced with this indeterminacy, there are only two possible solutions: "perfect competition" (2.2) or "arbitration" (2.3).

2.1. The indeterminacy of exchange

As Baccini (2010, 240) underlines, "Edgeworth's central interest was the indeterminateness of contracts and not, as suggested by his modern interpreters other than Newman [1987, 1994], the conditions of its perfect determination". Edgeworth does not start from the Walrasian hypothesis of a price set by a hypothetical auctioneer, who matches supply and demand in a market: he considers that the "tâtonnement" is "after all, not a very good idea" because it "indicates *a* way, not *the* way, of descent to equilibrium" (1889a, 556).[2] Edgeworth also criticises Cournot's approach of introducing perfect competition by starting with a monopoly and gradually increasing the number of competitors – this approach, he says,

[2] The question of whether Edgeworth's theory of "perfect competition" is "essentially the same" as that of Walras is not addressed in this article: see Walker (1973), who offers a historical reconstruction of the debate on whether the two authors' conceptions of competition are consistent, and Alvarez (2012) who discusses (and criticises) the traditional interpretation of Edgeworth's conception of competition. See also Walker (1987) on the controversy between Edgeworth and Walras (and Bortkiewicz) on the theory of "tâtonnement."

explains why Cournot "has missed the general theorem: that the solution is indetermined where the number of competitors is small" (1898, 110). Instead, Edgeworth describes exchange as a process involving contracts and re-contracts between agents, covering both prices and quantities. This allows him to demonstrate that conflicts lie at the heart of economics and that economic decisions may result from unequal power relations between individuals. Edgeworth then explains that, in a narrow market with few traders, they may be unable to agree on a common price due to an "indecidable opposition of interests" (1881, 29). The use of the term "war" to describe the bargaining process emphasises this opposition of interests (*ibid.*, 17; 1915, 347–346): each agent can contract with one agent and then, without the consent of the latter, re-contract with a third agent. They are, as Edgeworth (1904a, 40) writes, quoting Virgil, "like combatants *armis animisque refecti* [restored in their arms and in their souls]."[3] Without agreement on the price, the transaction cannot take place, even though it is in the interests of the parties "that there should be some settlement" between them.

The indeterminacy of the exchange occurs either due to an absence of competition, or because of "more or less perfect competition" (1881, 20). In such situations, letting agents talk to each other to reach an agreement – assuming this is possible – is problematic: "an accessory evil of indeterminate contract is the tendency, greater than in a full market, towards dissimulation and objectionable arts of higgling" (*ibid.*, 29–30). Edgeworth refers here to Jevons and Courcelle-Seneuil. He quotes Jevons regarding a bargain between two agents: one is "really willing" to sell a house for a minimum price of £900, despite announcing an initial

[3] Edgeworth (1904a, 40–41) adds that the bargaining process is likely to modify the preferences and the "dispositions" of the participants, particularly through the information it provides. This phenomenon is especially observable in the realm of the labour market:

> When the bargaining extends over a considerable time, changes are apt to occur in the dispositions of the parties, whether independently of each other and sporadically, or in a manner even more fatal to the theory, by way of imitation. Also, where there occurs a series of encounters between buyers and sellers, the results of the earlier encounter may affect the dispositions with which the later ones are entered on. The terms which the labourer is ready to offer and accept are altered by the alteration in his habits and efficiency which is the consequence of previous bad bargains.

minimum selling price of £1,200; the other wants to buy it for a maximum price of £1,100, despite announcing an initial purchase price of £900. Jevons concluded that

> such a transaction must be settled upon other than strictly economic grounds … The art of bargaining consists in the buyer ascertaining the lowest price at which the seller is willing to part with his object, without disclosing, if possible, the highest price which he, the buyer, is willing to give. (Jevons, 1879, 124; quotation by Edgeworth, 1881, 30)

Edgeworth also refers to Courcelle-Seneuil, whose approach to transactions on a market of limited size – a "small market" [*petit marché*] – is very close to his own: Courcelle-Seneuil presents negotiation as "a struggle … in which the advantage necessarily remains with the one who possesses more … strength", due to their less pressing need or greater purchasing power – while the one who is "less intelligent, less far-sighted, less well-informed" can be "robbed" [*dépouillé*].[4]

Given these problems, it is not surprising that Edgeworth seeks to identify possible solutions. The first of them corresponds to the ideal of perfect competition; more precisely, the issue at stake is whether such a situation of perfect competition can genuinely be realized in practice.

[4] Courcelle-Seneuil (1858) highlights several elements, some of which are similar to those found in Edgeworth's analysis. On the one hand, the fact that bargaining takes time and is therefore costly:

> The most common method used in bargaining is to delay reaching an agreement, in the hope that time will cause the opponent to capitulate. This slowness, which slows down transactions and wastes precious time, is inevitable in small markets where bargaining is preserved by the very nature of things, because it sometimes provides great advantages to those who are skilled at it. (1858, 247, fn. 1)

On the other hand, he considers bargaining to be a "struggle subject to conditions different from those of a fight, but it is a struggle" (*ibid*., 247), to the detriment of "the less intelligent, less far-sighted, less well-informed man" whose needs are the most pressing, and to the benefit of the "more intelligent, more far-sighted or better-informed man" and who "controls his desires" (*ibid*., 248–249).

2.2. "Perfect competition"

"Perfect competition" involves a large number of traders, meaning that the price is "determined by supply and demand".[5] This produces an equilibrium solution that corresponds to a Pareto optimum, since in this situation each agent is on his or her demand curve. This curve "expresses the quantity of transaction that provides … the maximum benefit at a certain rate of exchange [the equilibrium price]". When perfect competition does not exist, as shown below, this results in an indeterminacy of exchange, which is described in very negative terms. The desire to escape from this indeterminacy is an "aspiration of the commercial world" for "articles of peace", breaking with the "appeal to force" and "acquiescence to custom" in economic relations (*ibid*., 51); otherwise, the price would be the result of passion. Perfect competition not only makes it possible to reach "a maximum of wealth" (1922, 380), but also seems to promote the "impartiality of chance", which corresponds not to "justice" or to "humanity", but to "the majestic neutrality of Nature", and prevents economics from being a "dismal science' (1881, 51), as Carlyle famously said.[6] As Baccini (2010, 241) stresses, this reference to the "dismal science" may be linked to Edgeworth's application of the calculus of probabilities to the theory of exchange: in a large market comprising a large number of buyers and sellers, Edgeworth states that the "law of unity of price" results from chance in the mathematical sense of the term, as evidenced by the following quotation from his 1884 article entitled "The rationale of exchange": "The *rationale* why the complex play of competition tends to a simple uniform result is to be sought in … law of great numbers". Moreover, Edgeworth refers to perfect competition as "pure catallactics" (1881, 34). This reference

[5] Actually, Edgeworth's definition of "perfect competition" comprises several hypotheses: an "indefinite" number of individuals, who are free to contract and recontract and an "indefinite divisibility of each *article* of contract" (see 1881, 18–19).

[6] Edgeworth's position on nature, however, evolved: in 1877, he agreed with Mill on two points – that nature is not necessarily good ("Nature in general presents neither justice nor mercy"), and that it is impossible to judge the justice of a situation on the basis of an argument regarding conformity to nature (1877, 244–245 note D). In 1881, however, he criticised Mill's conception of nature, arguing that nature is not "as in the picture left by Mill, all bad, but a first approximation to the best" (1881, 82).

seems to resonate with his belief that perfect competition fosters the possibility of peace. In fact, the term "catallactics" signifies not only "to exchange", but also "to turn from enemy into friend". Richard Whately, one of Edgeworth's predecessors at Oxford University, appears to have been the first to propose renaming economics "catallactics", meaning "the science of *exchanges*" (1831, 6). However, it cannot be ruled out that Edgeworth adopted this term because of its dual meaning.[7]

Nevertheless, Edgeworth emphasises that situations of perfect competition — which he also refers to as "ideal competition" (1922, 385) or, in reference to Adam Smith, as an "obvious and simple system of natural liberty" (*ibid*., 382; also 1923, 493) — are rare in reality:

> To one seeking a representation at once clear and appropriate, the actual conditions of industry present the appearance of viscous and deliquescent body …: competition pure and simple no longer constitutes an adequate hypothesis. (1904a, 55)

Accordingly, it is highly unlikely that perfect competition can solve the problem of exchange indeterminacy. The real world indeed is dominated by "imperfections", which Edgeworth endeavours to list: they include the existence of monopolies (1881, 46), which "plays a greater part in modern economics than has been assigned to it in the classical treatises" (1894–1899d, 486); there are also personal service contracts, *i.e*. employment of domestic services (1881, 46–47); monopolistic competition, *i.e*. "a market in which an indefinite number of consumers are supplied by varying numbers of monopolists (*ibid*., 47);[8] "cooperative associations" (*ibid*., 49);[9] joint-stock companies (1894–1899, 486) or "municipal

[7] Hayek underlined the two meanings of the term in 1976 (108).
[8] "The hypothesis of two-sided monopoly is strongly suggested by what we see before us".
[9] In the introduction to his 1881 book, Edgeworth also mentions the role of the imperfect divisibility of the goods as a source of indeterminacy (vi): while this explanation was the one Jevons insisted on, Edgeworth

and governmental industries (*ibid*.). He also introduces the concept of "natural abilities", referring in particular to Mill, whom he quotes regarding "natural monopolies in favour of skilled workers" (*ibid*., 485–486). Furthermore, he predicts that two of these "imperfections" are bound to develop: trade unionism and cooperative associations (1881, 135). Consequently, he concludes that "it does not seem very rash to deduce, if not for the present, at least for the near future, a considerable degree of indeterminacy". More generally, he asserts that indeterminacy "prevails everywhere: in international politics, in domestic politics; between nations, classes and sexes" (1881, 51; see also Edgeworth, 1904a, 51).

However, Edgeworth's writings also contain passages in which he presents a decidedly less positive view of competition. For example, he describes it as an "idol" (1890b, 571).[10] In certain passages of *Mathematical Psychics*, his tone appears to contradict his earlier emphasis on the positive aspects of perfect competition: he denounces what he calls the "reverence paid to *competition*" by economists (1881, 50); according to him, impartial observation of reality should alter this admiration for competition, "in whose results – as if worked out by a play of physical forces, impersonal, impartial – economists have complacently acquiesced" (1881, 50).[11] The terminology he uses may indeed suggest a degree of scepticism about the legitimacy of this "reverence" for competition.

To understand this apparent contradiction, it seems necessary to emphasise that Edgeworth also uses the term "competition" in a slightly different sense, reminiscent of

neglects it in 1881, for two reasons. First, because he considers it as "perhaps of secondary practical importance", and second "partly because it has been sufficiently treated by Prof. Jevons" (1881, 19, fn. 1). Edgeworth mentions it in his contribution of just a few lines to Palgrave's *Dictionary* dealing with the law of indifference – Jevons's one – where only two "circumstances which may counteract the law of indifference in some kinds of market" are considered: monopolies and indivisibility of goods (1894–1899b, 472); he also mentions it in 1904 (1904a, 36). Finally, his writings also mention other factors that explain the imperfection of competition: for example, he cites the lack of labour mobility (the "immobility of the labourer") as one of the reasons for the "imperfection of the labour market" (1881, 135; he considers it "analytically … as a case of [the] *first imperfection* [monopoly]").

[10] "… that idol of the market place, unlimited *laissez faire*." (Edgeworth, 1890b, 571).

[11] Creedy (1986, 101) interprets this passage as meaning that, for Edgeworth "in a regime of oligopoly, the role of abstract economics would be much reduced". This interpretation does not contradict the one proposed here.

certain aspects of Mill's critique of his own era, which he saw as being dominated by the struggle of some against others:

> I confess I am not charmed with the ideal of life held out by those who think that the normal state of human beings is that of struggling to get on; that the trampling, crushing, elbowing, and treading on each other's heels, which form the existing type of social life, are the most desirable lot of human kind, or anything but the disagreeable symptoms of one of the phases of industrial progress. (Mill, 1848, 754).

Mill did not use the term "competition" to describe this struggle: on the contrary, he distinguished between the two, denouncing the latter but emphasising the advantages of the former. This positive view of competition is, incidentally, highlighted by Edgeworth in his entry on Mill in the *New Palgrave*, in which he notes that "there are many now who disagree with the favourable estimate of competition, which concludes the chapter ["on the probable futurity of the labouring classes"]" (1894–1899c, 762). Beyond this remark, he offers a more explicit critique of this admiration for competition in another article entitled "Competition and Regulation", also written for *Palgrave's Dictionary of Political Economy*: there, he defines competition as "a struggle for life" (1894–1899a, 421), the result of which is "the survival of the fittest" (1894–1899a, 421). However, he adds, this selection of the fittest is by no means "natural": it is "artificial" in nature due to the unequal starting conditions among the individuals involved. Indeed, he writes, "competitors do not start fair", as "inheritance and other causes favour some", while "want of capital, education, opportunity, handicap many"

(1894–1899a, 420).[12] Consequently, he explains, this struggle does not necessarily lead to rewarding the success of the most capable.[13]

He also refers to customs, on two occasions. The first concerns commercial activity, specifically the fact that some shopkeepers benefit from shops being closed on Saturdays and public holidays. He explains that, thus, "it may be in the interest of all shopkeepers to close their shops on Sundays and public holidays, provided that the closure were universal; but, without the enforcement of that proviso, it may be in the interest of a few to steal custom by keeping their shops open" (1891b, 781). This behaviour can be interpreted as free riding on a social convention: by deviating from a collectively sustained custom, certain agents captured the benefits generated by the compliance of others. The second instance of custom appears in his preface to MacDonald's 1904 book *Women in Printing Trades*: there again, he refers to "Custom and the somewhat capricious sense of decorum" as explanations for the "absence of competition between men and women", saying that this "counts for more than might have been expected in restricting women to certain industries" (1904b, viii), whereas "in ideal competition men and women shall be equally free to choose any of the occupations" (1922, 387). Regarding the matter of female remuneration, he engages with the frequently advanced argument that women's lower wages are due to men's remuneration encompassing familial responsibilities: "the bulk of men are subject to a charge from which the bulk of women are exempt, the support of families" (1923, 493). Assuming the validity of this argument, he posits a familial wage as consensual, stating that it expresses "a very general belief and sentiment": it is "a norm accepted throughout the civilized world" (1922, 391). Based on this,

[12] In enumerating the differences in agents' endowments, Edgeworth refers to Wagner, *Lehrbuch Per Politische Ôkonomie*. He then concluded that "Society is stratified in 'non-competiting groups'", referring this time to Cairnes and J.S. Mill (1894–1899a, 420).

[13] Edgeworth adds another argument against competition: its results, he writes, may be negative. It can lead to a fall in wages and standards of living (1894–1899a, 421; see also Edgeworth, 1889b, 552), to deteriorating working conditions, particularly in terms of working hours, to a waste of capital, or even to the formation of monopolies (1894–1899a, 421–422). It is unclear whether this argument is linked with his idea of inequality of starting points or if it is a general criticism of competition.

he concludes that, due to the initial unequal starting conditions for men and women, the labour market is not characterised by perfect competition: "the industrial competition between men and women is very imperfect" (1904b, x); however, the principle of equal pay for men and women can only be justified in a hypothetical scenario of perfect competition.[14]

The difficulty in interpreting Edgeworth's position on perfect competition undoubtedly lies in the fact that he does not aim to demonstrate its desirability with regard to distribution: "it is not the purpose of the present study [*Mathematical Psychics*] to attempt a detailed, much less a polemical, discussion of pure Catallactics, but rather … to inquire how far contract is determinate in cases of imperfect competition" (1881, 34).

In other words, having demonstrated how rare situations of "perfect competition" were in reality, and the harmful consequences of this rarity in light of the discourse of economists who value competition and derive "a simple intelligible rule, *laissez-faire*" (1894–99a, 421), Edgeworth introduces a final solution to resolve the indeterminacy of exchange. This is the principle of arbitration, which is the only means of resolving conflicts of interest within society: "The whole creation groans and yearns, desiderating a principle of arbitration, an end of strifes" (1881, 51).

2.3. Arbitration

The next step is to define this principle of arbitration. Edgeworth mentions three possibilities: "justice"; equity and "fairness of division"; and, finally, utilitarianism (*ibid*.).

Justice, whose definition he fails to specify, is dismissed on the basis that it assumes that individuals "already know their duty" (*ibid*.). In the absence of that knowledge, and given

[14] This explains why Edgeworth does not refer to the marginalist principles when dealing with female wages. Pujol (1992, 101–102) criticizes him for this.

that individuals are actually guided by the pursuit of their own interests, this criterion is of little use because it is open to interpretation. It cannot be used to determine appropriate action.

The second criterion, equity — which may appear to be a variation of the first — is subject to the same criticism, in that it provides no guidance on what should be done. Edgeworth (1904a, 54) illustrates this by quoting Jevons on the issue of "fair day's wages":

> As Jevons says, nothing at first sight can seem more reasonable and just than the 'favourite saying that a man should have a fair day's wages for a fair day's work … But, when you examine its meaning, you soon find that there is no real meaning at all. There is no way of deciding what is a fair day's wages.'[15]

The concept of an "equitable" or "fair" distribution is thus open to diverse interpretations by the parties involved. Edgeworth uses the example of a cooperative to illustrate this point: why should a "distribution [where] the workers take the net product, from which they pay a salary to the manager" be "more equitable" than one where the "operatives … take any fraction which might have been agreed upon, [and the] manager [takes] the remainder"? (1881, 52) Such a criterion has no chance of being accepted by the negotiating parties since it neglects the difference in effort they make.

The same can be said of negotiations between an entrepreneur and a worker. Equal sharing of the product of their joint labour would not be fair if the entrepreneur's renunciation of a larger share involved a greater "*sacrifice*" on his part due, for instance, to his "more highly nervous organization", which "required on the average a higher *minimum* of means to get up to the zero of utility" (1881, 54).[16] This impossibility of establishing clear and

[15] Jevons's position on the impossibility to define what a "fair wage" is also quoted in Edgeworth's entry on "Competition and Regulation" (1894–1899a, 421). It illustrates the difficulty "to imagine upon what other principle [than *laissez-faire*] certain complicated transactions of modern trade and industry could be regarded".
[16] Edgeworth likens the point corresponding to the zero level of utility to the "natural minimum of wages" (1881: 64), although he points out that the two are not "quite identical". Therefore, it would be the point at

indisputable rules of sharing was at the root of many conflicts, particularly in labour relations.[17]

Therefore, this "principle of *doctrinaire-justice*" cannot remove the indeterminacy of exchange: "the self-interests of the two parties will *concur* to bulge away from the assumed position [*i.e*, an equal share of the produce]" (*ibid*.). Edgeworth thus concludes that the "dictates of a moral sense" are unclear and undecisive on this issue (1904a, 54).

The only option left, then, is this "more definite principle", which is defined by both J.S. Mill and H. Sidgwick as "the greatest possible total utility" or "the superior principle of Greatest Happiness" (1906, 148). Utilitarian arbitration will enable us to move "from the principle of self-interest to the principle, or at least the practice, of utilitarianism". Given that it is equated with competition as a solution to indeterminacy, the principle (and practice) of utilitarianism ought to have the same characteristics as competition; namely, it must restore the impartiality that, as Edgeworth observed, the evolution of the economy is gradually causing to disappear. However, impartiality is not the only characteristic of the utilitarian arbitration principle. This refers to what Edgeworth calls "exact utilitarianism", which is defined by both its objective and what he regards as an essential psychological characteristic of individuals: the existence of differences in the capacity to experience sensations. As early as 1877, Edgeworth explained that "exact utilitarianism" requires that "the *greatest product* of number and average happiness, that is the greatest quantity of happiness, should be sought" (1877, 210). This objective can only be achieved if account is taken of individuals' varying

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which an individual's resources only allow him or her to satisfy his or her essential needs and not obtain goods that the individual find pleasurable.

[17] Edgeworth devotes many passages to the question of trade unions and strikes, a reality that worried many economists at the time. His stance on the impact of trade union struggles on workers' circumstances seems ambivalent: in 1881, he emphasises that such struggles lead to lower wages for workers if they "refuse to sell their labour except at a reserve price", but he also states that this does not apply when negotiations cover both the quantity and remuneration of work (1881, 137). However, in 1904 he states that strikes harm workers by destroying capital (1904a, 54).

ability to transform a certain amount of "distribuend" – such as "wealth, power, &c, strictly speaking means to stimulus" (*ibid*., 221) –, into happiness.

3. From the differences in individual capacities for pleasures and pains to inequalities

Edgeworth's utilitarian analysis, which emphasised the differences in capacities for pleasure and pain that characterise agents, gave rise to significant debate (see Guidi, 2008). Edgeworth repeatedly discusses the positions of Bentham, J.S. Mill and Sidgwick on equality: he criticises them on the grounds that, in his view, they would maintain that the principle of greatest happiness requires an equal distribution of wealth among members of society.[18] This belief was rejected on three grounds. First, Edgeworth contrasts animals and humans, remarking that "it was never intended by a sound utilitarian that 'Mr. Pongo' [a monkey] was to count for one" (1877, 222); from this, he extends his reasoning, in a Darwinian vein, to individuals who differ "in the order of evolution," (*ibid*.), thereby achieving what Peart and Levy (2005, 226) describe as "Edgeworth Reconciles Darwin and Utilitarianism."[19] Second, he argues that the hypothesis has not been proven: "when the question rises why equality should be aimed at [J.S. Mill] affirms, rather than demonstrates, 'the equal claim of everybody to all the means of happiness'." Finally, he believes that claiming that all people have an equal capacity to feel pleasure or pain was dangerous because it "would lead direct to socialism" (1891b, 782).[20] Edgeworth concludes that "equality is not a necessary condition of greatest happiness" (1881, 89, fn. 1; see also vii).

[18] In his review of Pigou's *Wealth and Welfare*, Edgeworth underlines that not only Pigou but also Sidgwick adopted the same hypothesis that people are more or less capable of happiness (1913, 62).
[19] Or, alternatively, that Edgeworth achieves "the fusion of utilitarianism with biology." (Peart and Levy, 2005, 211).
[20] Edgeworth was highly critical of socialism, as can be seen, for instance, from his review of J.S. Nicholson's *The Revival of Marxism* and A. Loria's *Karl Marx* (Edgeworth, 1921; see also 1890b, 571). However, he repeatedly describes the utilitarian principle of arbitration as socialist (see for instance 1922, 385–386).

The "problem" of the "utilitarian calculus" is indeed to "find … the distribution of means and … of labour, the … quality and … number of population, so that there may be the greatest possible happiness" (*ibid*., 56).[21] The distribution of "means of pleasure", *i.e*, in economics, mainly consumer goods and services, should favour those individuals with the greatest ability to transform them into pleasures, while treating individuals with the same capacity for pleasure equally: "*the distribution of means as between the equally capable of pleasure is equality: and generally is such that the more capable of pleasure shall have more means and more pleasure*" (*ibid*., 64, italics in original). The same applies to work, which is perceived as painful, since Edgeworth, drawing on Fourier, rejects the idea of "sweet" work (*ibid*., 59). Thus, both equality and inequality of resources appear to be conditions for achieving the greatest happiness.

By focusing on distribution in this way and linking it to individual characteristics in terms of sensitivity to pleasure, Edgeworth was well aware that his analysis raised a number of problems due to its emphasis on differences in sensitivity to sensations.[22] The unpopular nature of this hypothesis is not the only issue at stake, even though Edgeworth acknowledges that it is "unwelcome to the modern reader; otiose to our unphilosophical aristocrats, and odious to our democratical philosophers" (1881, 130). This hypothesis also assumes that sensations can be measured (3.1) and that all units of pleasure are homogeneous (3.2). Since the objective is to maximise the happiness of a society composed of individuals with different capacities to experience pleasure, one must also accept the idea of interpersonal comparability (3.3). Finally, achieving this objective requires the ability to identify individuals with a

[21] In this section, I do not address the issue of population (see section III).

[22] To avoid repetition, I use the terms "sensitivity to pleasure" and "capacity for pleasure" as synonyms. Edgeworth distinguished between the two in 1877, using the term "sensitivity" to refer to the absolute sensory threshold of a sensation, that is, "the lowest value of stimulus for which there is any sense of pleasure at all" (1877, 212).

greater capacity for pleasure. Otherwise, the allocation of available resources would not maximise collective happiness.

3.1. The issue of the measurement of sensations

The first issue concerns the measurement of sensations. As shown by the symmetry in his analysis between pain in the economic sense — the effort involved in work — and pleasure, Edgeworth does not exclude the possibility of measuring sensations. Psychophysics, to which he regularly refers, has made it possible to determine the laws of effort; the hedonometer he imagines in the third appendix of *Mathematical Psychics* would achieve the same. He writes: "let there be granted to the science of pleasure what is granted to the science of energy: to imagine an ideally perfect instrument, a psychophysical machine, continually registering the height of pleasure experienced by an individual […]" (1881, 101). He even asserts that the measurability of pleasure is an "axiom" (*ibid*., 59).[23]

However, this initial optimism about the possibility of measuring sensations appears to have gradually waned. When he turns to the topic of taxation, he concedes that "in order to obtain a ratio between two 'lots' of satisfaction … there is required a precision of hedonic units which few utilitarians would venture to postulate" (1910, 460).

Does this mean that Edgeworth ultimately believed all attempts to maximise happiness should be abandoned because individual happiness cannot be properly measured? This is a difficult question to answer, given that his analysis of utilitarian ethics dates from 1881, while he only recognised the impossibility of accurately measuring sensations in a much later work (1910). However, as early as 1881, in the appendix devoted to the hedonometer, he suggested that a lack of precision in a measurement could be offset by increasing the number of

[23] On the role of psychophysics in Edgeworth (and Jevons), see Chaigneau, 2002; on the history of utility measurement since Edgeworth, see Colander, 2007.

measurements. This is similar to the idea in probability that "greater accuracy may be attained by more numerous observations with a less perfect instrument" (1881, 102).

3.2. The heterogeneity of sensations

The second issue concerns the heterogeneity of sensations and is addressed by Edgeworth through two different approaches, developed respectively in *New and Old Methods of Ethics* (1877) and in *Mathematical Psychics* (1891).

In 1877, he devotes a specific paragraph to this issue, entitled **"**Differences of Kind in Pleasure" (200–202), in which he discusses the possibility of comparing sensations of different kinds. He frames his argument from a moral perspective, drawing on the distinction between "lower pleasures" and "higher pleasures," notably found in Mill. He then quotes Bentham's well-known statement that *"*quantity of pleasure, being equal, push-pin is as good as poetry*"* (*ibid*., 200).[24] The absence of any moral judgment concerning the quality of sensations appears to Edgeworth to be consistent with Sidgwick's utilitarianism, and he justifies it by means of a metaphor: *"*the so-called lower pleasures are related to the higher, somewhat as differentials to an integral*"* (*ibid*., 201). In other words, it is the quantitative significance of these pleasures, spread *"*over an indefinite area of society, and through countless generations*"* (*ibid*.), that gives them their value and makes it necessary to take them into account. Admittedly, there is incommensurability between these pleasures and those deemed "higher"; nevertheless, there is also an equivalence between them, and hence the possibility of comparison, provided that one reasons at an aggregate level and takes into account the different extent over which they operate.

[24] It is likely that Edgeworth took up this quotation from the essay Mill devoted to Bentham in 1838 (Mill, 1838, 113). Bentham's exact wording is: *"Prejudice apart, the game of push-pin is of equal value with the arts and sciences of music and poetry"* (1825, 206).

To some extent, Edgeworth here converges with one of the justifications offered by Bentham for establishing an equivalence in value (in terms of pleasure) between the game of push-pin and poetry: *"*everybody can play at push-pin: poetry and music are relished only by a few*"* (Bentham, 1825, 206). Lower pleasures are accessible to the greatest number, as illustrated by Edgeworth's example of sugar consumed by the poor. To neglect them, and to value only higher pleasures, he argues, would lead to conclusions running counter to the maximization of collective happiness— quite apart from the injustice it would likely entail: *"*But query whether a tax imposed on the poor man's sugar, to afford a prince the means of performing an act of graceful generosity, would be (abstraction being made of the injustice) felicific?"

In 1881, when Edgeworth returned to the issue of the heterogeneity of sensations, his perspective had shifted. The question is no longer how to construct a collective happiness function on the basis of sensations of different kinds. What now matters to him is how to deal with the differing sensitivities of individuals to pleasures that themselves differ in kind. The problem is thus one of distribution. Edgeworth proposes the idea that "individuals who have less capacity for pleasure in general *[may] have a special capacity for particular pleasures*" (1881, 65; italics added). Although Bentham's analysis is not mentioned in this context, we might be reminded of what the latter developed in chapter VI of his *Introduction to the Principles of Morals and Legislation*, which is devoted to "circumstances influencing sensibility": "one man, for instance, may be most affected by the pleasures of the taste; another by those of the ear" (1789, 51).[25] Edgeworth considers that this does not alter the analysis significantly, except to make it slightly more complex. The distribution of the

[25] Bentham identified thirty-two "circumstances influencing sensibility", including health, strength, sex, "quantity and quality of knowledge", "sympathetic biases", rank, education… (*ibid*., 52). For his part, Edgeworth (1877, 201) cites "customary practices, rooted and intertwined in the higher feelings," such as "abstaining from meats on religious grounds" or "the ancient Roman prejudice […] against women drinking wine." Religion was also mentioned by Bentham.

corresponding "particular pleasures" will form a "residue" which must be distributed according to the sensitivities to these pleasures. This idea takes two forms, as it seems to suggest that the means of obtaining pleasure must be divided into two categories. The first category is allocated to agents with the greatest capacity to experience "pleasures in general", who effectively obtain the largest share of the available means. The second category, namely the "residue", is distributed to individuals who are less capable of experiencing "pleasures in general", but more sensitive to particular pleasures.

It is worth pointing out that this consideration of the heterogeneity of pleasures does not necessarily lead Edgeworth to recommend a less unequal distribution of resources, as evidenced by the second form of heterogeneity of sensations that he acknowledges, which concerns "new pleasures" and "old pleasures" (*ibid*., 63). New pleasures (such as travel, *ibid*.) are by nature more intense, whereas repetition leads to a reduction in the intensity of old pleasures (see below, § 3.4). This is where the hypothesis of diminishing marginal utility comes in. In other words, the heterogeneity of pleasures not only acts as a brake on this decrease, but can also lead to the recommendation that more resources be granted to individuals who are most capable of experiencing pleasures. According to Edgeworth, it is indeed the "refined pleasures" that are likely to be the most intense, and only the most privileged have access to them.[26]

3.3. The issue of intercomparison of sensations

The next issue is the difficulty of comparing individual sensations. Several times in his writings, he quotes Jevons's refusal "to compare the amount of feeling in one mind with that in another" (Jevons, 1879, 14), which he dismisses as a "position of extreme *solipsism*"

[26] See Edgeworth (1882, 446): "But it is no part of the utilitarian first principle that the happiness of each sentient shall 'count for one', irrespective of that *tendency to be reproduced and multiplied and spread which is the attribute of 'refined' pleasure*."

(1904a, 58). [27] He states that such a position has been abandoned "by economists in general in the received theory of taxation", which is founded on "human wants and feelings'" (*ibid*.). However, Edgeworth seems to be aware of the difficulties of making comparisons between individuals, but he considers that interpersonal comparisons of happiness "can no longer be shirked, if there is to be any systematic morality at all" (1881, 7–8; see also 1904a, 58; 1909, 368).[28] Moreover, he reasons not at the individual level, but by assuming that sensitivity to pleasures depends on general characteristics. In 1877, he – who at that time refers to "sentient"– thus distinguishes animals from "men", "civilized" from "savage races", and the aristocracy "when [it] really represent[s] a higher order of evolution" (1877, 222); then, in 1881, he narrows his focus to human beings and adds two further general characteristics, sex and "talent" (1881, 77–78):

> Yet in the minds of many good men among the moderns and the wisest of the ancients, there appears a deeper sentiment in favour of aristocratical privilege – the privilege of man above brute, of civilised above savage, of birth, of talent, and of the male sex. This sentiment of right has a ground of utilitarianism in supposed differences of *capacity*. … If we suppose that capacity for pleasure is an attribute of skill and talent …; if we consider that production is an *unsymmetrical function* of manual and scientific labour …; we may see a reason deeper than Economics may afford for the larger pay, though often more agreeable work, of the aristocracy of skill and talent. The aristocracy of sex is similarly grounded upon the supposed superior capacity of the man for happiness.

[27] "When competition is no longer umpire, the economist must abandon – if he ever maintained – the position of extreme *solipsism* which Jevons in a solitary but remarkable passage has propounded" (1904a, 58). In 1922, however, he wrote that Jevons's position "may, if we can" be maintained (379).

[28] In 1909, he introduces a distinction between "Economics in a narrow or 'proper' sense" and the "wider Science of Political or rather Social Economy of which the object is not simply wealth but welfare, so far as dependent on wealth": it is in the latter only that "'a common dominator of feeling' must be postulated" (1909, 368; see also 1923, 487).

Edgeworth thus concludes that, to maximise overall social happiness, "the happiness of some of the lower classes may be sacrificed to that of the higher classes" (1881, 74). This suggests not only that inequality is justified, but also that increasing inequality may be beneficial.

However, there are two limits to these inequalities. Firstly, the "privations of the least favoured" must not result in them experiencing a negative level of happiness (*ibid*., 75):

> It may be admitted, however, that a limit below the zero of happiness, even if abstractedly desirable, would not be humanly attainable; whether because discomfort in the lower classes produces political instability (Aristotle, &c.), or because only through the comfort of the lower classes can population be checked from sinking to the starving-point (Mill, &tc.). Let politics and political economy fix some such limit above zero.

Secondly, accepting the hypothesis of diminishing marginal utility leads him to conclude that "the pleasures of the most favoured could not weigh much against the privations of the least favoured" (*ibid*.). However, this hypothesis of diminishing marginal utility does not contradict his inegalitarian conclusions, since he considers that the most advantaged individuals, benefiting from a higher level of education, enjoy not only pleasures of greater "quality" — "sympathy, aesthetic feeling, sense of dignity" — but also a greater variety of pleasures: "the cultivated man had an advantage in the variety of his tastes." (1877, 234)

3.4. Founding differences in the capacity for pleasure and pain

As shown below, Edgeworth refers to a "deeper sentiment in favour of aristocratical privilege", which he claims dominates the minds of "many good men among the moderns and the wisest of the ancients" (1881, 77). As it is described as a "sentiment", it seems difficult to prove it: he qualifies the assumption of equal capacity for happiness in different persons as

"unprovable" (1887, 90), but defends it by appealing to what he calls the "principle of Authority in Social Science", a method that he believes should be used by any "social philosopher" when dealing with "subject-matter which is not amenable to Inductive Method" (1887, 484). His writings are full of expressions such as the "authority of innumerable savants," the "authority of the masters of the supreme science [mathematics]" (1881, 97) or "of all the savants in Europe" (1877, 190; 192), "high authorities" (1890b, 568; 1904a, 37; 1917, 406; 1922, 383; see also 1877, 205), and so on. Throughout his writings, he makes numerous references to the positions defended by other authors, whether or not they were his contemporaries and whether or not they were economists. This resulted in him authoring a substantial number of reviews: as noted by Hicks (1983, 164), "there was no other economist of his period who read so much of what was appearing in many countries and in many languages" (see also Newman, 1990).[29] For example, in the aforementioned discussion of the family wage, Edgeworth observes that Rowntree, several Australian judges, Taussig, and "even [J.S.] Mill" had defended this concept (1922, 391–392). Furthermore, he adds that "the wiser and more moderate advocates of equal pay for women [like Elizabeth Leigh Hutchins] admit it" (*ibid*., 391).[30] In contrast, he argues that "few would agree with the authoress of *A Sane* [*sic*] *Feminism*", whose name he does not mention, when she states that "domestic morality and feminine dignity make it essential for the married woman of to-morrow to be

[29] Newman explains that the exact number of reviews written by Edgeworth is unknown: there are probably more than 173 reviews of 187 books (1990, 530); Baccini (2003, 624) lists 204 reviews.

[30] Edgeworth quotes a passage from Hutchins's 1913 *Conflicting Ideals: Two Sides of the Woman Question*. It should be emphasised that this passage does not justify wage inequality between men and women based on the concept of the family wage; rather, it refers to women's work as a constraint rather than a choice. A few pages later, however, Hutchins states that women are increasingly demanding financial independence: "There is evidence of a growing moral sensitivity in women, some of whom dislike dependence even upon a husband with whom their relations are otherwise happy" (1913, 64–65). Hutchins does not condemn this development, stating: "This may be considered very overstrained, but every moral or ethical advance in civilisation is obtained by the growth of new impulses in individuals, which appear overstrained to others. It is felt, therefore, that on many grounds the married woman needs a more stable economic position" (*ibid*., 65).

independent of her husband's income …" (*ibid*., 391–392).[31] He dismisses this opinion as originating from a too-radical author.

The construction of the authoritative position therefore appears to follow statistical logic. As Stigler (1978, 293) emphasises, "to Edgeworth, the practices and statements of great scientists and philosophers were like experimental data, to be incorporated with appropriate weights into an informal weight mean".[32]

According to Edgeworth, wealth, "race", and gender are not the only factors that explain differences in the capacity to feel pleasure (or pain). Building on Jevons's analysis of the dimensions of utility, Edgeworth also proposes a series of elements intended to elucidate the alleged correlation between the degree of civilisation and the ability to perceive sensations. Jevons (1871) proposed that utility could be represented by two dimensions: the intensity and duration of the sensation. He adds that the intensity reflects the propinquity of the sensation, as "a future feeling is always less influential than a present one" (1871, 72; see Sigot, 2002). Edgeworth further explores this idea, building on Jevons's parallel between "the untutored savage" and the child, who are both "wholly occupied with the pleasures and the troubles of the moment" (Jevons, 1871, 35). Edgeworth (1881, 100) concludes that a distinction must be made between two conceptions of time: objective and subjective. The perception of time varies within and between societies (see also Edgeworth, 1894–1899e).

If, as Edgeworth postulates, it is conceivable to envisage a scenario in which the collective happiness would be at its maximum, given the different capacities of individuals for pleasure, it remains to be seen what would induce them to agree to abandon the situation of

[31] The exact title of the book written by Wilma Meikle was *Towards a Sane Feminism*. It had been published in 1916.

[32] In support of his position, Stigler quotes Edgeworth's article entitled "The Value of Authority Tested by Experiment" published in *Mind* in 1888: "The Doctrine of Errors supplies the *rationale* of the common-sense practice of deferring to authority … All that authority can do is … to get rid of a large portion of error" (quoted by Stigler, 1978, 293).

indeterminacy and move towards the situation defined by utilitarian arbitration. One of Edgeworth's illustrations of indeterminacy is illustrative of this point: he posits the scenario of two individuals, Robinson and Friday, who are unable to agree on the remuneration Robinson should pay Friday in exchange for the latter's work (1881, 28–29). No contract, specifying the wage and the effort, can be concluded, even though it would be in the interests of both individuals to agree: given the preferences of each, there are an infinite number of possible contracts – an "*indefinite number* of points" (*ibid*., 29). Utilitarian arbitration entails the selection of one of these potential outcomes, with due consideration of the individual's sensitivity to pleasure and capacity for work. However, the question remains as to what would motivate the two agents to accept this specific contract. Edgeworth does not provide a direct answer to this question in his writings. Nevertheless, one possible explanation can be derived from his analysis.

4. What can induce individuals to accept the utilitarian solution?

Edgeworth states that "when the utilitarian arrangement is defined on the basis of conciliation between self-interested parties to a contract, it is presupposed that both parties gain by the contract" (1904a, 57); otherwise, the parties would try to reach a better agreement by recontracting. However, this presupposition remains silent about the process by which agents might be induced to accept a utilitarian agreement. This is a crucial point, since Edgeworth (1877, 222) explicitly acknowledges that one of the strongest arguments in favour of an equal distribution rests on the fact that "any other distribution would be attended with preponderant disadvantages.—the pangs of envy, sense of injustice, &c." Although he does not explicitly describe the process by which agents come to accept the utilitarian solution, it is nevertheless possible to reconstruct it on the basis of the limited elements he provides, as a progressive sequence.

First, Edgeworth identifies the reasons that lead agents to move away from situations of indeterminacy (4.1): for reasons related both to the characteristics of the utilitarian solution and to their own psychology, individuals have an incentive to seek a determinate outcome. However, this initial motivation is not in itself sufficient to explain why a specifically utilitarian solution would be selected. A second step is therefore required. Edgeworth invokes the principle of sympathy, which provides a mechanism through which individuals come to take into account the welfare of others, though he defines this principle in different ways across his writings (4.2). Yet the mere existence of sympathy does not fully solve the issue; its intensity and scope remain variable. This raises a further question, namely of which conditions favour the expansion of sympathetic feelings among agents. Accordingly, in a third step, Edgeworth's writings point to a number of factors that contribute to strengthening sympathy and thus to stabilising an agreement around a common outcome (4.3).

4.1. The attribute of utilitarian arbitration

Edgeworth begins by observing that utilitarian arbitration and perfect competition should share the same attribute: if perfect competition is characterised by impartiality, then so must arbitration be. Impartiality implies that all possible contracts have an equal probability of occurring. He then posits that each individual attributes the same probability of achieving one or other of these contracts: "it may seem to each that as he [the agent] cannot have his own way, in the absence of any definite principle of selection, he has about as good a chance of one of the arrangements as another" (1881, 55). This does not mean that the gains associated with each final situation are identical; rather, each agent gains more or less depending on the equilibrium point reached: "these positions lie in a *reverse order of desirability* for each party" (1881, 55).

Edgeworth then introduces a new hypothesis relating to individual behaviour: he implicitly assumes that individuals are risk-averse, which leads them to seek an agreement.[33] They would therefore prefer to escape from indeterminacy and are prepared to accept the "certainty" of one of the possible arrangements: "But rather than resort to some process which may virtually amount to tossing up, both parties may agree to commute their chance of any of the arrangements for the certainty of one of them" (*ibid*.).[34] It then remains for Edgeworth to specify what precise *arrangement* the parties will agree on.

4.2. The principle of sympathy

Edgeworth discusses explicitly two possibilities. The first is that the arrangement should be a compromise between the two extremes, with the parties agreeing "to split the difference" and to "meet each other in the neighbourhood of the central point" (1881, 55). He notes that this was the arrangement adopted in Ireland in response to the agrarian crisis, involving an equal sharing of rent between landowners and tenants:

> Her Majesty's Commissioners of Inquiry into the working of the Land Act of 1870, &c, having sanctioned and supposing settled a 'fair rent', recommend that the 'unearned increment' which may accrue should, *in the absence of first principles* to determine the distribution between landlord and tenant, be divided *equally* between them. (*ibid*, 134–135, fn. 4, italics in original)

He does not comment on this solution, but it can be inferred that, insofar as it assigns no weight to possible differences in the capacity for pleasure between the landlord and the tenant, it does not necessarily lead to the maximisation of total welfare: it is precisely this aspect that

[33] Edgeworth hypothesises that indifference curves are convex (1881, 36).
[34] Creedy (1986) underlines that "Edgeworth clearly viewed distributive justice in terms of *choice under uncertainty*".

had led him, in his discussion of the principles of arbitration, to reject any principle other than utilitarianism (see above, section 2.3). It is therefore likely that the second arrangement—possibly corresponding to the same allocation point as the first—is, in Edgeworth's view, the more relevant one. It draws on the concept of sympathy.

Edgeworth refers to sympathy on several occasions, while attributing to it two distinct meanings. In 1877, sympathy appears to denote a form of alignment with others that arises when their actions have positive effects on one's own situation. In this sense, it is a self-interested feeling, which he discusses when he argues that there exists a "predominant source" among the "sources of pleasurable stimulus" for the individual, namely "fellow-creatures" (1877, 224). The benefits derived from this source depend not only on the nature of an individual's "associates" but also on the means of these associates, that is, on their shares in the *distribuendum* (*i.e.* the means that are to be distributed).[35] The "nature of [the] associates" refers to what Edgeworth calls their "*useful* qualities," which contribute to increasing the *distribuendum*, such as "physical strength, inventiveness, industry, and ambition" as a stimulus to productive effort (*ibid*., n.1; see also 220–221).

Two points deserve emphasis here. First, this feeling presupposes not only that the individual expects to benefit from the increase of what is to be distributed, but also that any inequalities between his or her own position and that of his or her associates do not give rise to envy. Second, Edgeworth acknowledges that it is difficult to disentangle the pleasure derived from the prospect of an increase in the *distribuendum* from that arising directly from these qualities themselves, "as immediate sources of pleasurable stimulus", independently of their contribution to aggregate output. In the latter case, he refers to qualities that are "*directly pleasurable* to others", ranging "from non-sympathetic instinct, through the whole scale of

[35] This idea should not be confused with what is today referred to as the theory of trickle-down economics— in Edgeworth's terms, "that the extravagance of the rich is necessary for the employment of the poor"—which he explicitly rejects, describing it as an "old and noxious fallacy." (1894–1899f, 479).

more and more symphonious passions, to the qualities which irradiate the purest pleasures, to rational benevolence, and romantic love, and friendship, and even friendliness, and good manners." (*ibid*.) It is this second meaning—no longer grounded in self-interest but in disinterested or other-regarding sentiments—that ultimately prevails in Edgeworth's later writings, while the first is no longer explicitly invoked. It is associated with utilitarianism: "the utilitarian settlement may be selected, in the absence of any other principle of selection, in virtue of its moral peculiarities: its satisfying the sympathy (such as it is) of each with all, the sense of justice and utilitarian equity." (1881, 53–54)[36] More than sympathy in the Smithian sense of the term, this is in fact altruism, as Collard (1975) observed: "the rule of maximizing the aggregate advantage requires that each party should attend to the interest and enter into the wants of the other party" (Edgeworth, 1915, 357).[37] Utilitarian arbitration is therefore defined by the consideration of the interests of others: either the individual is completely indifferent between their own interests and those of others, corresponding to what Edgeworth calls "pure utilitarianism"; or the individual considers the interests of others to a limited extent, corresponding to "impure utilitarianism".

However, the hypothesis that "sympathy" removes the indeterminacy of exchange due to imperfect competition raises a difficulty in terms of its consistency with the assertion that "the first principle of Economics is that every agent is actuated only by self-interest" (1881, 16). On several occasions, Edgeworth pointed out that considering the interests of others presupposes deliberation. In 1877, he considers "not inconceivable" that "one's greatest

[36] Sympathy is mentioned by Edgeworth several times, which seems to contradict Peart and Levy's statement that "F.Y. Edgeworth was instrumental in the removal of sympathy from economic and utilitarian analysis near the end of the [nineteenth] century" (2010, 152).

[37] However, Collard does not consider Edgeworth's proposition on Altruism as a solution of indeterminacy of exchange. On the contrary, Fontaine emphasises the role played by sympathy in Edgeworth's work, which "does not involve any reference to an imaginary change of positions" (1997, 277). However, he states that Edgeworth's description of pure utilitarianism is the "only case that could support an interpretation of the principle of sympathy in terms of an imaginary change of circumstances and personhood with another". However, upon examination of Edgeworth's analysis, it appears that there is a lack of evidence to support this hypothesis.

pleasure – *in those calm moods which give the character to one's life* – should invariably consist in the contemplated pleasures of others" (1877, 202; italics added). In *Mathematical Psychics*, he explained that impure utilitarianism corresponds to "the position of one for whom *in a calm moment* his neighbour's happiness as compared with his own neither counts for nothing, not yet 'counts for one', but *counts for a fraction*" (1881, 102; italics added).[38] The reference to a "neighbour" is important: when it comes to taking the interests of others into account in one's behaviour, proximity clearly plays a decisive role. In his writings, Edgeworth refers to two types of proximity: the first is the "social distance between the individual agent and those of whose pleasures he takes account" (*ibid*., 103); the second is affective closeness, which plays a particular role in the relationship between spouses or within families: sympathy with other's interests "actuated in effective moment … in *domestic* … contracts" (1881, 53 fn. 1; see also 1890a, 560).[39]

However, Edgeworth subsequently broadens his understanding of sympathy in two ways.[40] Firstly, he explicitly states that this feeling does not necessarily imply social or emotional closeness: in 1904, for example, he writes that "sympathy does not necessarily

[38] This idea appears two more times in *Mathematical Psychics*. On page 53 (fn. 1), where sympathy with others is likely to occur "in a calm, effective moment"; and page 103: "The test whether … an agent is really a pure utilitarian would be, I suppose, whether on having his attention directed to the alternative between methods [*i.e.*, self-interest or altruism], having collected himself, in a cool moment, he would or would not, calmly and deliberately sacrifice his own greatest interest to that of others." Edgeworth also refers to "calm self-interest" which "minimized" both "impotent recriminations" and "irrelevant hates" (1915, 357).

[39] In his 1923 article, Edgeworth does not mobilise the concept of sympathy, but rather that of chivalry, the meaning of which is not exactly the same. However, sympathy is implicit in the following statement by which he rejects the proposal: "It is a fearfully rash assumption that, because each man now generally works hard for the sake of his own wife and children, all men will work equally hard for all wives and children collectively".

[40] This evolution in Edgeworth's position may perhaps be explained by the discussion he presented in 1877 on the consequences of the "means and inducements to migration," which he associates with the progress of civilization and which "tends to break up the ties of consanguinity, and generally the fixedness of social relations." He argues that these developments result in "the impoverishment of that 'ideal emotion' [after Bain]" which constitutes sympathy among close relations, but that this "loss" is compensated by the "increased means of communication" (1877, 234).

imply sentimental attachment".[41] He now introduces the concept of "intellectual sympathy", which is detached from any emotion. Secondly, he links sympathy to the desire to improve one's circumstance, stating that "sympathy, according to Adam Smith, is the basis of a not very sociable emotion, –ambition" (1904a, 58–59). This enables him to reconcile the potential conflict between sympathy and self-interest:

> A distinguished psychologist [A. Bain] has not hesitated to pronounce 'sympathy compatible with dislike.' It is, then, no counsel of perfection to cultivate sympathy, in the sense of mutual understanding, between the parties to distribution. No Utopian eradication of self-love is contemplated. (*ibid*.)

Above all, this development gives sympathy a wider scope of action, while also opening up the possibility of its action evolving over time. This is how we can understand Edgeworth's following statement:

> It may be hoped, indeed, that through the practice of conciliation, in the course of generations, the dispositions of which the gratification constitutes self-interest may become more social, so that, for instance, an advantage founded on the extreme privation of others would not appear desirable to the capitalist employer of the future. But such 'moralization' of the saving classes, though it may be expected, need not be postulated for the working of conciliation. Intellectual sympathy alone might effect much. The arts by which the sympathetic imagination may be cultivated form a supremely important topic, but one which hardly falls under the *theory of Distribution*. (*Ibid*., 58–59)

[41] The assumption that sympathy might be independent of "social distance" had already been suggested by Edgeworth in 1877, when, commenting on Mill's position in *Utilitarianism*, he affirmed that the possibility "to conceive a soul moved only by the attraction of hedonism, so moved that the integrated attractive force of the pleasures of all other souls—an attraction *not* varying with social distance, should constitute an acceleration in the direction of utilitarianism." (1877, 203)

The end of the quotation deserves explanation, which Edgeworth does not give. However, this does not mean that cultivating what he calls the "sympathetic imagination" is not an economic matter: it is part of the "art of economics"; in other words, it is a question of applied policy.[42]

4.3. How to increase the weight of the sympathy in society?

Although the nature of sympathy, understood in the broad sense, "hardly falls under the theory of distribution", it is not totally foreign to economics, since it comes under the heading of welfare economics: it "belongs to political economy in a larger sense, which included the satisfactions attending the possession and use of wealth" (1922, 379–380). As a result, Edgeworth's writings contain some ideas on how it can be promoted. However, these ideas are scattered throughout his writings and are generally only touched upon. For example, he explains in a footnote how to increase the "sympathetic imagination" between agents referred to in the previous quotation. In this footnote, he explains that cooperation can be a useful tool for this, as it allows workers to put themselves in the place of employers: "co-operation … would have among its good effects that of enabling workman to realise the position of employers" (1904a, 58, fn. 1).[43] He also mentions the possibility that a monopoly may "be influenced … by a regard for public opinion, and even a concern for the interests of the consumer," adding that "the latter feeling may especially be expected *where the monopoly is held by government*." (1894–1899d, 487; italics added).[44] There are, however, two

[42] Edgeworth seems to adopt the distinction between the science and art of economics found in the work of many of his contemporaries, such as J.S. Mill and Sidgwick. Admittedly, he does not explicitly refer to them on this theme, which he only addresses in some of the reviews he writes.

[43] In his review of Charles Gide's book, *La Co-opération*, he also describes cooperation as "a good cause" (1900: 113).

[44] This echoes a remark he makes in his discussion of Marshall's *Principles of Economics*, albeit less explicitly: "So far is it from being *a priori* true that governmental interposition can only work mischief. It is not, indeed, to be expected that a government, still less than a monopolistic company, should have regard only to the interest of the consumer." (1890b, 569).

exceptions to the piecemeal nature of the solutions he envisages, namely two ideas that he mentions or suggests more frequently or at greater length.

The first reflects the influence exerted on him by eugenic thinking and is grounded in the belief that sympathetic feelings are more highly developed among the upper classes: this belief leads him to evoke the method he calls the "method of total selection" (1881, 70) which "substitute[s] in one generation for any number of parents an equal number each superior in capacity …" (*ibid*., 71).[45] This "method" reflects a recurring theme in his writings, namely that of population. In 1877, he claims that Malthusianism is a utilitarian doctrine (222) and he refers to Mill who, he writes, defended a "*limited and cultivated* society" (*ibid*, 210; see also 223). However, he argues that "it is probable that neither Mill nor anyone else would approve of any increase, however small, of the average happiness, attended with any decrease, however large, of number" (*ibid*.). In 1881, he is more explicit: he moves from the Malthusian idea of a "quantitative limit" to population – in a context of given resources – and from Mill's idea of improving its "quality", in terms of culture, to the selection of individuals according to their "quality" – that is, their rank in the society. He is even more explicit in 1922, when he discusses Eleanor Rathbone's proposal for the introduction of a system of family allowances: "The increase of population might be welcomed if it consisted of the higher types. But in the current proposals one sees no security for the improvement of the race" (1922, 397). This imperative of population selection, however, encounters a limit, as was emphasized in 1881. For Edgeworth, this limit is not ethical in nature, but rather stems from the fact that it would deprive part of the population—those with a low capacity for pleasure—of "domestic pleasures": Edgeworth therefore doubted whether it was "expedient to sacrifice the present to the future, without the highest scientific certainty and political security" (1881, 71).

[45] Edgeworth adopts an eugenic position focusing on the idea of the "quality" of population. See, for instance, Peart and Levy, 2005, 226–230.

The second idea stems from the belief that "the capacity for pleasure is a property of evolution" (1881, 77). Edgeworth regularly alludes to an evolution in the feelings of individuals, as when he writes about Mill's hypothesis of an economic man: such hypothesis "is not, *in the present state of society*, as arbitrary as the hypothesis which might be entertained of a perfectly altruistic man" (1891a: 4; italics added). Sensitivity to pleasure is in fact associated with sensations of superior quality that can be cultivated: education undoubtedly has a role to play here, which Edgeworth hardly develops. For example, in the aforementioned footnote, he refers to Marshall's views on the need to develop "the training of future business men in economics at the universities", as a means of fostering "the sympathetic use of the imagination." (1904a, 58 fn.1). Should this lack of development be linked to the author's extreme caution when it comes to drawing practical conclusions from purely theoretical reasoning?[46] Alternatively, this may point to a logical tension within his analysis: if the degree of sympathy within society depends on the level of "civilization", itself contingent upon the expansion of education, while resources are to be allocated primarily to the most capable, then— as Baccini (2025, 14) argues—the population as a whole cannot benefit from it. In such a framework, the diffusion of sympathy across society appears unlikely; here again, a eugenic logic emerges.

5. Concluding remarks

Edgeworth's utilitarian approach demonstrates that the debate on equality cannot be confined to considering the hypothesis of diminishing marginal utility alone. He argues that, in order to maximise collective happiness, individual differences in the ability to convert

[46] "It must be pointed out that deductive reasoning is not to be too sharply pulled up with the demand, 'What then do you propose?' For, even if this highly deductive method should prove more potent than the present tentative sketch may warrant, it would have power only to give general instructions, not detailed regulation" (1881, 126).

resources into pleasure must be considered. It is these differences that lead him to advocate an unequal distribution of resources, which disadvantages the least educated, the poorest, and women — in other words, all those who, in his view, have a lower capacity for pleasure. Providing a basis for this hypothesis was the first challenge for Edgeworth; moving on from individual utility to collective utility was the second. From this perspective, Edgeworth's analysis represents a step toward the development of welfare economics, yet one that could not be fully realised due to its conclusions being strongly influenced by the philosophical doctrines of his time, particularly evolutionism and eugenics (as well as by Mill's distinction between pleasures of different qualities).[47] Edgeworth was aware of the difficulties raised by his conclusions; however, these difficulties do not stem from the potentially hard-to-accept implications of his "abstract" analysis. Rather, in his view, they arise from the fact that "abstract" principles cannot easily be translated into "utilitarian institutions" to be implemented in practice. Unlike Jevons or Marshall, he thus acknowledges the difficulty of prescribing such institutions, frequently invoking and quoting Sidgwick on this point. The only general conclusion he is prepared to accept is that free trade should be, if not rejected, at least "limit[ed]" (1906, 150; see also e.g. Edgeworth, 1890a, 563; 1890b, 421; 1891b, 15).

Acknowledgement

An earlier version of this article was presented at the Economic Philosophy PHARE seminar in Paris in May 2025 and at the ESHET conference in Turin. The author would like to thank Alberto Baccini, Alain Béraud, Elodie Bertrand, Victor Bianchini and Ghislain Deleplace for their invaluable feedback, as well as the seminar and conference participants for

[47] I am grateful to one of the referees for drawing my attention to this point. According to Peart and Levy (2005, 211–212), the disappearance of the assumption of differences in individuals' capacities for pleasure played a crucial role in Robbins's critique of interpersonal comparisons of utility, which ultimately led to the "new welfare economics"; by rejecting such comparisons, Robbins effectively eliminated any eugenic perspective. This interpretation has been discussed (and rejected) by Hoover (2008, 451–452).

their helpful comments. Thanks are also due to the two anonymous reviewers of this journal for their constructive remarks and suggestions during the revision process.

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