

Menudo, José Manuel

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'PERFECT' COMPETITION IN A.-R.-J. TURGOT. A CONTRACTUALIST THEORY OF JUST EXCHANGE

JOSÉ MANUEL MENUDO

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‘Perfect’ Competition in A.-R.-J. Turgot. A Contractualist Theory of Just Exchange

José M. Menudo*

Universidad Pablo de Olavide
Carretera de Utrera, km. 1
41013, Seville, Spain.

jmmenpac@upo.es

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Abstract
of
**‘Perfect’ Competition in A.-R.-J. Turgot. A Contractualist
Theory of Just Exchange**

By

José M. Menudo

Universidad Pablo de Olavide

This paper analyses one of Turgot’s first economic essays, *Plan d’un ouvrage sur le commerce, la circulation et l’intérêt de l’argent, la richesse des états* (1753-4). Written prior to the appearance of physiocratic influence, it is Turgot’s contribution to the movement of writing that bubbled up around the general issue of the market as mechanism of allocation generated by Vicent de Gournay. The wide conceptual apparatus –cognitive models and a series of interdisciplinary analytical tools–, employed by Turgot in the analysis of social problems, is integrated into this particular context. Given this widespread interpretation, the conclusion is reached that Turgot created a theory of just exchange on the basis of a contractualist approach. The behavioural hypothesis introduced by Turgot into exchange provides an alternative response to the dilemma posed by the rule of equal gain for the uniqueness of price and to which the literature has responded with the assumption of symmetric or transparent agents.

JEL classification: B11: A12: B41: D63: D81

Keywords: Turgot; Relation of Economics to Other Disciplines; Price formation; Equity, Justice, Inequality; Criteria for Decision-Making.

1. Introduction

A.-R.-J. Turgot's theory of value and price has been tackled extensively in the literature, although this was not an issue to which the author dedicated a great deal of pages in his most famous publication *Réflexions sur la formation et la distribution des richesses* (1766). The most widely-used text to inquire into Turgot's approach to this subject is *Valeurs et Monnaies* (1769), which makes fundamental contributions in this respect (Groenewegen, 1970; Desai, 1987; Erreygers, 1990; Hervier, 1997; Dafalvard, 1998). Other research has focused on the application of the theoretical system of prices to the practical world (Rothschild, 1992; Persson, 1993; Faccarello, 1998; Benkemoune, 2005), based on a wide variety of administrative texts and with core works about the subject, such as *Foire* (1757) and *Lettres au contrôleur général Terray sur le commerce de grain* (1770). The issue of value is dealt with in other texts that have been used by the literature to tackle different questions: *Observations sur les mémoires de Graslin et Saint-Péray* (1767) could represent a change in Turgot's theoretical stance about value (Yamakawa, 1959), and together with *Lettres à Hume* (1767) and *Projet de lettre au contrôleur général Bertin sur un projet d'édit* (1761) these texts have been used to discuss the process of price gravitation or its role in reproduction and capital accumulation (Bourrinet, 1966; Ravix & Romani, 1983).

This paper analyses one of Turgot's first economist essays, *Plan d'un ouvrage sur le commerce, la circulation et l'intérêt de l'argent, la richesse des états* (1753-4), which deals precisely with the question of value and price as its central theme. The essay was written at a time when a great many texts were bubbling up around the general question of the market as a mechanism of allocation, generated by the 'revolution' of Vicent de Gournay in the *Bureau de Commerce*, encompassing fifteen authors with over forty works between 1753 and

1759¹. This essay by Turgot is frequently used by secondary literature, although it has never been a specific subject of study in itself. Like *Valeurs et Monnaies* (1769), it is an unfinished work and has the peculiar feature of having been written before Turgot became linked with the physiocratic circle².

This research points to the conclusion, firstly, that *Plan d'un ouvrage sur le commerce* (hereafter) improves our understanding of the “general theory of value”, as Turgot himself calls it, and to a different extent so do the texts drafted in these same early years and dedicated to other subjects. Turgot sketches out a process of exchange, which attains a unique and fair price, fully consistent with his other texts about this subject.

Secondly, this “unique et primitive” law of exchange supports a theory of value which Turgot qualifies as ‘just’ on the basis of a contractualist approach. Reason is able to find a *natural principle of equity* which turns self-limitation into an advantage for all individuals. Hence, a principle of action according to this social contract –“amour de soi réglé par la justice”– guarantees a just allocation, but also equitable by means of a competitive process. This is how Turgot adds moral motivations based on justice to an individual’s act of choice. People pursue their own economic interests but how the goals are defined and how to pursue them are specially defined by Turgot. Braudel (1979) points out that Turgot carried out this task when describing the *homo oeconomicus*, which society created, as an element compatible with a new market economy. However, his principle of action goes beyond self-interest assumption.

Il eût compris que, dans le sens où cette proposition [*l'intérêt est l'unique principe qui fait agir les hommes*] est vrai, elle est une puérité et une abstraction métaphysique d'où il y n'y a aucun résultat pratique à tirer, puisqu'alors, elle équivaut à dire que *l'homme ne désire que ce qu'il désire*. (Turgot 1773: 637).

¹ Cl.-J. Herbert published *Essai sur la police générale des grains* (1753), with great success (6 editions in 4 years), as a proposal for free trade, whereas the articles *Concurrence* (1753) and *Commerce* (1753) by F.-V. Forbonnais for the *Encyclopédie* by Diderot and D'Alembert were more doubtful about the absence of the regulator due to the conflict (particularly in foreign trade) between the immediate perspective of the agents and the long-term vision required for public interest. A wide range of perspectives where *Le Journal Économique* (1751-72), *Le Journal de Commerce* (1759-62) and *Gazette du Commerce* (1763-83) provided vehicles to disseminate the work of Gournay’s contemporaries (Kaplan, 1976; Steiner, 1997; Charles, 2004).

² The relationship begins in 1755 (Groenewegen, 1977: 13), although in *Eloge de Vincent De Gournay* (1759), Turgot still uses the term commerce to designate all economic activity, which highlights the origin of its use (his master Gournay) and its scientific evolution (Perrot, 1988).

This hypothesis of behaviour could be a response to the dilemma raised by the equal gain rule for Turgot's theory of price in the case of a non-normative exchange and to which the literature has responded with the assumption of symmetric (Hervier, 1997; Dafalvard, 1998) or transparent agents (Erreygers, 1990).

This paper is structured into two parts, following the order of Turgot's *Plan*. Firstly, section 2 presents the specific law that, in the view of Turgot, governs the competitive market and guarantees its fairness. This was the foundation used by Turgot to defend the process of price determination as a theory of value. Subsequently, section 3 develops the analytical elements used by Turgot to present an alternative system of allocation in which equity (i.e. equal gain) is guarantee to the public price of the magistrate. Specifically, we describe the two processes of exchange - isolated and multiple - explicitly dealt with in *Plan d'un ouvrage sur le commerce*.

2. The principles of natural equity

In Turgot, decision-making is not free from moral weight, and furthermore “S'il [Helvétius] parle de l'intérêt réfléchi, calculé, par lequel l'homme se compare aux autres et se préfère, il est faux que les hommes, même les plus corrompus, se conduisent toujours par ce principe. Il est faux que les sentiments moraux n'influent pas sur leurs jugements, sur leurs actions, sur leurs affections.” (Turgot 1773: 638)³. But he resists situating reason as a mere appendix of passions and interests. The moral-reason-interest triangle has been used by the literature to explain the functioning of Turgot's competitive mechanism. The separation of the moral aspects of the theory has already been broached on the basis of a subsequent essay entitled *Valeurs et Monnaies* (1769). In some cases, the solution to just exchange has been a normative theory

³ Turgot and Helvetius had a renowned confrontation over interest as the only principle of action. Turgot remarks how important it is to involve the ideas of moral and justice in the motivations for human behaviour: “Il (Helvétius) confond avec les cagots et les moralistes hypocrites ceux qui s'occupent de ces minuties ; jamais du moins, on ne le voit fonder sa moral sur la justice et il n'a pas un mot qui tende à prouver que la justice envers tous est l'intérêt de tous, qu'elle est l'intérêt de chaque individu comme celui des sociétés” (Turgot 1773: 637). For a comparison between the two authors, see Hervier & Leredde (2002).

where the equality of gain between the parties – ‘la notion de moyenne’⁴ – becomes the condition of the exchange (Erreygers, 1990). However, a criteria of justice based on a norm *a priori* does not appear to stand up to analysis of Turgot’s writings (Hervier, 1997). As we shall see later on, this condition refers to the existence of the price and not to the justice of the result. In contrast to this interpretation, Hervier (1997) puts forward a positive theory of exchange in which the price, which is (i) freely reached and based on (ii) respect for the right of ownership, is just. However, in Turgot’s writing, the freedom of commerce is defined as an absence of interference in economic processes and, therefore, in itself does not describe price formation.

Plan d’un ouvrage sur le commerce (1753-4) constructs a model of competitive exchange as an alternative system to the public price of the magistrate, with the simultaneity of both leading to the appearance of freedom of commerce; competitive exchange exists prior to its comparison with other systems of allocation⁵. In this text, Turgot suggests that the justice of exchange is not determined by the result in itself, but rather by the process through which said price is formed: “il est évident que l’échange serait toujours parfaitement égal et quelqu’un des deux ne pourrait être lésé” (Turgot [1753-4a]: 383). On the basis of a contractualist concept of justice, Turgot presents a system of allocation where individual advantage –i.e. the absence of conflict– springs from a limitation to self-interest. The perfect equity of the competitive process –subject to the social contract– is presented immediately afterward. Two stages for a system which does not require an arbitrator.

C’est attaquer le principe fondamental de toute société, en donnant atteinte au droit de propriété, dont la jouissance pleine et entière est le but de toute législation, le motif qui a engagé les hommes à quitter l’état de sauvages pour se rassembler en sociétés et se soumettre à des lois. Enfin, c’est aller directement contre le but qu’on se propose qui est

⁴ “C’est précisément l’égalité entre ces deux fractions qui forme la condition essentielle de l’échange, égalité qui s’obtient en fixant la valeur appréciative à la moitié de la différence entre les deux valeurs estimatives.” (Turgot 1769: 94). This quotation is usually used to support a normative interpretation of Turgot’s theory of price. However, we can clearly observe that equality of gain is not the condition of the exchange but rather the match between the two amounts.

⁵ Turgot presents different examples of the lack of efficiency without intervention; such is the case of disequilibrium exchange rate due to error on the part of the agents or abuses in the right of ownership.

de procurer au peuple sa subsistance au plus bas prix possible. Ce but s'atteindrait tout naturellement par la concurrence, que la liberté amènera toujours. (Turgot [1753-4a]: 385).

Hence, Turgot comes to the state of nature to raise the social contract –i.e. the definition of the right of ownership– as a collective agreement that resolves the initial allocation problems

2.1. Private Property

The first question explicitly tackled in *Plan d'un ouvrage sur le commerce* (1753-4) looks at the elements that sustain the process of exchange⁶. These revolve around the foundation of competitive exchange that is ownership; a natural right for sensualist authors who take their cue from the thinking of John Locke.

La propriété de part et d'autre est la base de l'échange ; sans elle, il ne peut y en avoir; le désir de part et de l'autre est le motive de l'échange ; sans elle, il ne peut y en avoir (...). Ainsi, tout ce qui peut être possédé et désiré peut être l'objet d'un échange et entre dans le commerce ; je dis possédé et désiré, j'aurais pu dire tout ce qui est possédé, car tout ce qui peut être possédé peut être désiré, quoique tout ce qui peut être désiré ne puisse pas être possédé. (Turgot [1753-4a]: 379).

For Locke, all economic relations are part of the broad natural state in which the right of ownership is developed according to a series of moral rules established by God, in other words, which pre-exist all right. These rules include the right of subsistence – with the limitation of leaving some land uncultivated so it can be appropriated by others – or expropriation if the owner does not act in the collective interest – i.e. the accumulation cannot result in a spoilage –(Henry, 1999). Locke maintains that these moral obligations guarantee lands and resources for all participants in the state of nature.

Turgot follows the same methodological approach. In order to understand the exchange, it is necessary to find the principles that sustain it –those born of human nature– and the relationship of the individual with nature is the best place to observe them. Consequently, there is where we find individuals as the

⁶ *Plan d'un ouvrage sur le commerce* (1753-4) begins with an outline of the thirteen sections that make up the essay: (i) General Plan, (ii) Evaluation of the Products in Real Terms and (iii) in Monetary Terms, (iv) Price Variation due to Real and Monetary Causes, (v) Exchange, (vi) The Speed of Circulation, (vii) Credit, (viii) The Terms of the Credit, (ix) The Language of the Terms, (x) Different Types of Credit, (xi) The Wealth of a State, (xii) Agriculture and Manufacture, and (xiii) Consideration of Policies about Luxury.

elemental subjects in order to tackle the following research program: (i) the idea of possession, (ii) the process of appropriation and (iii) its limits.

Il fallait, à ce qu'il me semble, pour se former des idées nettes sur cette matière, remonter aux premiers principes de la possession; examiner les premiers rapports des objets de la nature avec nous, par lesquels ils excitent nos désirs et nos craintes. Ils satisfont à nos besoins; ils deviennent la source commune où nous puisons tour à tour le plaisir et la douleur. Il fallait montrer comment l'idée de jouissance a fait naître l'idée de possession, comment les objets de nos désirs offerts par la nature à tous les hommes sont sortis de cette communauté générale et ont été attribués à différents particuliers, en fin, chercher dans les différentes limitations qu'on peut donner à ce droit des particuliers, ou ce qui est la même chose, à la propriété; l'origine des différentes manières de posséder et des différentes conventions que les hommes peuvent faire entre eux par rapport à la possession des choses. (Turgot [1753-4a]: 381).

The scenario is exactly the same in both authors: the impossibility of self-provisioning leads men to live in society, specifically within an economic system of common resources appropriated by means of the right of the first occupant. But unlike Locke, Turgot does not maintain the existence of moral obligations in the “state of nature” and, therefore, there is no restriction on the right of ownership –e.g. private property is not limited to perishable goods (Fontaine, 1997) and land is not scarce. In Locke, and later on in François Quesnay, an individual can perceive moral rules and learn to follow them –freedom is synonymous *with intelligence and antonymous with animal freedom*⁷. Turgot moves away from this argument because two kinds of passions (“douces” and “tumultueuses”) have a central role in the initial process of knowledge creation instead of reason: “... ainsi les passions ont multiplié les idées, étendu les connaissances, perfectionné les esprits, au défaut de la raison dont le jour n'était pas venu et qui eut été moins puissante si elle eût régné plus tôt.” (Turgot 1750: 168). Therefore, in the initial state a non-rational interest is the principle of action. In addition, Turgot finds several problems with the right of the first occupant as a system of allocation.

The first problem appears when the right of the first occupant exceeds its corresponding proportion, generating a negative effect on the “general utility of society”.

⁷ Only those who do not have access to reason remain outside of Justice and Freedom: “dans l'ordre moral les enfants, les fous, les imbéciles ne sont pas libres” (Quesnay, 1747: 157).

C'est une suite du droit de propriété que les juristes définissaient le droit d'usage et d'abus, mais malgré cette définition bonne ou mauvaise; on ne peut douter que le législateur n'ait le droit de régler cet usage pour l'utilité générale de la société; d'empêcher par exemple qu'un homme ne substitue une magnificence stérile à une fécondité utile et qu'une terre destinée à nourrir un peuple de travailleurs ne soit plus que la promenade de quelques hommes oisifs. (...) Un droit ne va pas plus loin que le titre sur lequel il est fondé, parce que l'effet est toujours proportionné à sa cause. Le droit de propriété est établi sur l'utilité générale ; il y est donc subordonné.

(Turgot, [1753-4b]: 439).

The legislator creates political laws which, when tied in with civil laws, define the development of the rights on the basis of a predetermined public utility⁸. Public utility refers to certain common interests, specifically the relationship of the natural rights of every individual (Vergara, 2008)⁹. It is not a utilitarian concept of welfare, since natural rights are not justified by the general utility they generate¹⁰, but rather by the place from which the principles that sustain them are taken – human nature – and by the fact that they are obtained through reason.

The self-imposition of constraints by means of a social contract can resolve this problem. Later on, in *Mémoire sur les Mines et Carrières* (1764), Turgot detailed its content: labour is established as the criterion to turn the right of the first occupant into the property right.

Elle n'a point borne sa garantie aux terrains enclos: un sentiment d'équité naturelle, très-conforme aux intérêts de la société, a fait regarder le travail de la culture comme une occupation suffisante pour assurer la propriété légale d'un héritage et la possession de ses fruits. (Turgot, 1764: 367).

Therefore, social contract and political laws shape the original right of the first occupant to turn it into a subordinated right of ownership, -in accordance with general utility, in other words, compatible with all natural rights.

⁸ Turgot labels any legislator who does not consider civil laws a *tirant* and he who does not consider political laws an *ignoramus* (Turgot [1753-4b]: 439n).

⁹ Public utility becomes a principle of action on the part of the legislator, specifically guaranteeing the natural rights. This motivation will guide all economic political measures undertaken during Turgot's tasks of public responsibility (Rothschild, 1992).

¹⁰ "...ce n'est pas même son utilité...il est licite par un principe plus général et plus répétable encore...je veux dire par le droit inviolable, attaché à la propriété, d'être maître absolu de sa chose." (Turgot, [1770b]: 170).

The agreement is not the result of a negotiation but rather is obtained through reason. Turgot considers that the complexity of social relations is developed together with reason and, therefore, progressively more principles of the natural order can be understood. Mankind has been capable of finding a criterion of *natural equity* which allows individuals to surmount a conflict among natural rights. The self-imposition of constraints which are collective by nature benefits every individual because everyone has an added and necessary compulsion to resolve the initial problems of allocation.

Dans l'établissement des sociétés, la convention générale et le lois ont ajouté à la force de chaque particulier celle de la société entière, dont tous les membres se sont réciproquement garanti la possession des héritages que chacun s'était appropriés par voie d'occupation et par son travail personnel. A la place des forces particulières, qui sont devenues inutiles, la force publique a été établie. (Turgot, 1764: 367).

This is how Turgot adds moral motivations based on justice to an individual's act of choice. From here on, people pursue their own '*amour de soi*' regulated by justice (Turgot, 1751: 311). It is not a regulatory framework for *self-interest* but rather a new principle of action, created by combining the two sources –private '*amour de soi*' and cooperative '*bien public*'– for personal benefit¹¹. Turgot also made use of the expression “un amour de soi très éclairé”, which allows us to speak of a *homo lumens* as the elemental subject when the author comes to formalise social relations.

A second problem appears in the scope of application for the right of the first occupant. The right of ownership must encompass the use and enjoyment of the good. Goods whose “natural situation” hinders the definition of the right of ownership cannot form part of the process of exchange. Turgot considers that the property rights have been progressively defined in relation to common goods, in such a way that some of them are still in that initial state. These are goods that cannot form part of exchange through the market:

¹¹ In Turgot, '*amour de soi*' is a legitimate regard each has for their own person. However, '*amour-propre*' have the negative connotation of selfishness, the absence of a passion called '*bien public*' to be exact: “Malheur à moi si mon objet pouvait être, en présentant ces considérations, de concentrer l'homme dans son seul intérêt; de le rendre insensible à la peine ou au bien-être de ses semblables; d'éteindre en lui l'esprit de citoyen , et de substituer une prudence oisive et basse à la noble passion d'être utile aux hommes! Je veux que l'humanité, que la passion du bien public procure aux hommes les mêmes biens que la vanité des fondateurs, mais plus sûrement, plus complètement, à moins de frais, et sans le mélange des inconvénients dont je me suis plaint.” (Turgot, 1757: 590).

goods that have been occupied, divided into destroyable goods through use (or which satisfy just one man) or goods not affected by use. It is a property of rivalry that strengthens the right of ownership.

... ces limitations ne s'étendent pas à tous les objets; il en est qui restent communs à tous les hommes et je dois examiner comment quelques-uns ont cessé de l'être. Il est des objets auxquels l'usage que nous pouvons en faire n'ôte rien et dont tous les hommes peuvent jouir à la fois sans se nuire les uns aux autres. Il en est aussi qui se détruisent par l'usage, ou qui, sans se détruire, ne peuvent satisfaire à la fois qu'un seul homme, ou du moins qu'un nombre déterminé, tels sont les *aliments*. (...). Il est clair encore que le droit d'occupation a été le seul qui aient pu les en tirer puisque nous les supposons communes. Voilà le premier droit particulier ou la première limitation du droit des autres hommes sur la chose occupée, l'*usage*; et dans les cas où cet usage détruit la chose même, ce droit est aussi fort qu'il puisse l'être. (Turgot [1753-4a]: 381).

Hence, an historic process of demarcating the objects of exchange emerges around the properties of rivalry and exclusivity, which we now require of goods to classify them as private. As the properties of private goods are acquired, the requirements necessary to be part of a just or natural exchange are attained. Without a perfectly defined right of ownership, we cannot speak of economic goods, even if they are necessary or desirable. The fact that not everything can be an object of exchange and, therefore, have value, is used in another subsequent text to discuss the definition of Wealth.

J'appelle biens (*bonna*) tout objet de jouissance, de possession, ou de désir, de besoin. J'appelle valeur (*merces*) toute chose susceptible d'échange et d'évaluation; richesse (*opes*), tout bien commercé, tout objet de jouissance qui a une valeur. (Turgot 1767: 239-4).

In sum, Turgot has presented the gains derived from leaving the initial state. A right of ownership born of social contract guarantees the absence of conflicts between natural rights. Any allocation that is not contemplated by this hypothesis is labelled unjust. The most oft-repeated case by the author are public prices, given that they go against free trade – consequence of fundamental rights (freedom, security, ownership, education, subsistence...) – and against the right of ownership in itself. So the justice of the result is in the hands of the competitive process. The exchange will always be just because '*amour de soi*' regulated by justice assumption cannot cause any damage to the natural rights of other participants. Any unfair result is the consequence of a break from the hypotheses.

The next step raised in *Plan d'un ouvrage sur le commerce* is a corollary of this process of allocation. If competitive exchange is a mechanism through which the result is always just, the price is the only principle in the process of establishing the value of a merchandise.

2.2. Corollary: *unité constante* vs. *unité arbitraire*

The second part of *Plan d'un ouvrage sur le commerce* looks at the unit of measurement of exchange. In the main schema, this was the content of the following part: “Echange des objets de nos désirs. Principes de leur évaluation dans le rapport de la demande aux quantités” (Turgot [1753-4a]: 376.).

Turgot confronted the “doctrine of the constant and unique value”. He considered the issue of the *justum pretium* to have been surmounted, although there was still a broad tradition that advocated an intrinsic value¹² and an exchange that bestows justice upon a specified price in another scenario. The idea of price adjustment in response to the variation in supply and demand, present in authors such as Nicholas Barbon, Douglass C. North, Edward Misselden and John Locke, had situated the market as a sufficient framework to establish absolute principles and objectives of value (Bowley, 1963). But in response to these approaches, Richard Cantillon and William Petty frame these contributions within an explanation of price fluctuation and under no circumstances as the determining factors in the value of a good.

On a essayé de prouver, dans la Partie précédente, que la valeur réelle de toutes les choses à l'usage des Hommes, est leur proportion à la quantité de terre employée pour leur production & pour l'entretien de ceux qui leur ont donné la forme (...). M. Locke, qui ne s'est attaché qu'aux prix des Marchés, comme tous les autres Ecrivains Anglais qui ont travaillé sur cette matière, établit que la valeur de toutes choses est proportionnée à leur abondance ou à leur rareté, & à l'abondance ou à la rareté de l'argent contre lequel on les échange. (Cantillon 1755: 152-4).

They consider that the value of a good is determined by economic forces that conquer the temporary oscillations of exchange. The measurements of value proposed by these authors are elements linked to production, such as the land, labour, or a combination of the two. Cantillon goes further, so that the

perturbations generated by supply and demand are an incentive to adjust production so that the market allows the current price to coincide once more with the intrinsic value (Aspromougos, 1996). Hence, the sphere of exchange and the sphere of production overlap in much of the literature from the 18th Century.

Even though he was a disciple of Vincent de Gournay, who spread Cantillon's *Essai* in France, Turgot does not distance himself from the thinking of John Locke to explain the process of price formation. He formulates his analysis of price formation within the framework of a pure exchange economy (fixed initial endowments), a novel approach at the time (Faccarello, 1992). However, the sphere of production and the sphere of exchange are not independent so Turgot introduces an agent that links both processes. Hence, the following section of this *Plan d'un ouvrage sur le commerce* is dedicated to the figure of the merchant or trader.

Le négociant est un homme qui achète pour revendre et revendre avec profit. Or, il ne règle le prix ni d'achat ni de la vente. L'un et l'autre de ces prix sont réglés par le rapport de l'offre à la demande (Turgot [1753-4a]: 381).

The first issue raised by Turgot is that the cost of production cannot be the value of a good. Hence, he makes a distinction between production and supply, “en dernière analyse, le vendeur et l'acheteur se confondent entre celui qui produit et celui qui consume” (Turgot [1753-4a]: 384). It is not the producer who sells, so analysing the behaviour of supply is not equivalent to analysing the behaviour of production¹³. In this text, the merchant is the only figure defined *ex professo* by Turgot to explain the process of exchange or *circulation des marchandises*. The status of this figure will be necessary throughout his work¹⁴; hence his remuneration makes it impossible for the price of exchange to coincide with the cost of production.

¹² For a more extensive text about Turgot's critique of scholastic thinking, see *Mémoire sur les prêts d'argent* (1770).

¹³ Ravix & Romani (1997) presents Turgot's economic thinking as a way of linking the sphere of production, the sphere of exchange and the financial sphere. The first of these, which Turgot referred to as the *circulation de l'argent*, is the most widely-used concept by the literature to explain how the competitive process in the use of capital allows a uniform rate of profits to be achieved between sectors. When this capital logic is linked with the sphere of exchange – *circulation des marchandises* –, to explain the process of competitive exchange, the mistake is made of making analogies between the behaviour of supply and that of production. The consequence is a reading of Turgot that presents problems integrating the two spheres (Eatwell, 1983: 538; Faccarello, 1992: 273; Aspromougos, 1996: 156).

¹⁴ Both the merchant and the trader, used indistinctly, appear for the first time in Turgot's writing in order to disassociate them totally from the ownership of capital; they are merely figures capable of “putting capital to work” by means of their *industry* (Turgot, 1749). It was not

Mais en quoi consiste cette injustice? Est-ce en ce qu'il lui a fait payer la chose au double de sa valeur réelle ou intrinsèque? Non, car cette chose n'a point, à proprement parlé, de valeur réelle et intrinsèque, à moins qu'on entende par là le prix qu'elle a coûté au vendeur ; ce qui ne serait pas exact, car ce prix de la façon ou du premier achat n'est point la valeur dans le commerce ou sa valeur vénale uniquement fixée par le rapport de l'offre à la demande. (Turgot, [1770b]: 176).

The cost of production cannot be a measurement of value. The merchant comes to the exchange with references that allow him to carry out “l'évaluation ou l'appréciation des choses échangées”, as do the other participants in the market. Therefore, at no time does Turgot abandon his subjective approach to exchange; there is always a calculation that takes place in the personal sphere by means of a matching process: “Le négociant compare les diverses productions de la nature et des arts dans les différents climats, leur valeur respective, les frais d'exportation et les moyens d'échange” (Turgot, [1753-4a]: 381-2). In this way, he sets himself apart from authors that maintain theories regarding the cost of production, but also from the subjective approaches proposed by Ferdinando Galiani or J.-J.-L. Graslin¹⁵, according to which man is the common measurement of value. These two approaches shape “the doctrine of the constant and unique value”, as he states in *Valeurs et Monnaies* (1769).

C'est cette vérité que M. l'abbé Galiani énonçait, il y a vingt ans, dans son traité *della Moneta*, avec tant de clarté et d'énergie, mais presque sans développement, en disant que la *commune mesure de toutes les valeurs est l'homme*. Il est vraisemblable que cette même vérité, confusément entrevue par l'auteur d'un ouvrage qui vient de paraître, sous le titre d'*Essai analytique sur la richesse et l'impôt*, a donné naissance à sa doctrine de la valeur constante et unique, toujours exprimée par l'unité, et dont toutes les valeurs particulières ne sont que des parties proportionnelles, doctrine mélangée chez lui de vrai et de faux. (Turgot 1769: 89).

until *Plan d'un ouvrage sur le commerce* (1753-4) that he explained that the trader is constantly monitoring the market, in search of profit opportunities as the difference in prices in time and space. He did not change this concept of the merchant throughout his work, although he uses as synonyms stockist or intermediary for the same economic function. When Turgot analyses the *circulation de l'argent*, the merchant is relabelled *entrepreneur de commerce*. This transformation is not only apparent, it is also functional because Turgot places the emphasis from this point onwards on the capital required to carry out this activity, as their action loses protagonism in exchange. However, we find that the *entrepreneur de commerce* still focuses his attention on the market, the prices and the consumer's needs. In *Observations sur les Mémoires récompensés par la Société d'Agriculture de Limoges* (1767), Turgot leaves the concept of *entrepreneur* to one side and uses merchant once again, specifically the intermediary, to focus on his action without any express link to capital. In these later years, the term *marchand d'argent* also appears who, like any other merchant, intermediates, in this case in the capitals markets (see Menudo & O'kean, 2006).

¹⁵ Turgot accepts the idea according to which man is the unit of the scale. However, he considers that this way of measuring and stating value is not feasible. If one man is an indivisible whole and the estimative value is a proportion of our capabilities and strength, it is impossible to state the value of a good in relation to the unit of measurement. Ultimately, Turgot expresses the complexity of a process based on calculation, needs and capabilities (see Giacometti, 1984).

In the scope of the savage state, Turgot points out that an individual exchanges labour-time with nature¹⁶ –labour, exchange and agriculture are all productive activities. The framework of a pure exchange economy involves a fragmented vision of the circulation of merchandise. But it allows principles of merchandise matching to be found, in other words, an equivalence for a compensatory effect between parties; the result of exchange is a price as equality between the estimative value and the relative cost of the good in terms of labour, capabilities or time (Turgot, 1769: 289). Turgot obtains the estimative value as a principle of the natural state, concluding that it is possible to state the value by means of matching goods¹⁷. Hence, goods and services do not have value in themselves beyond that expressed by their price because it is necessarily a matching process –e.g. current-money in the most developed case. The price does not confirm an intrinsic value determined in the sphere of production because exchange is the only principle in the process of establishing the value of merchandise.

...mais le rapport de l'offre à la demande est toujours l'unique principe de cette fixation. Quand il y a une grande quantité de la marchandise à vendre ou peu d'acheteurs, elle baisse de prix ; quand au contraire, la denrée est rare ou les acheteurs nombreux, le prix augmente. (Turgot [1753-4a]: 383).

In sum, the exchange is not merely a veil that endows the price with justice, regardless of where the latter is determined. For Turgot, exchange is also a mechanism of value assignment for goods. Therefore, the market price is the fair value of the good. The next part of *Plan d'un ouvrage sur le commerce* describes why nobody is interested in leaving this social contract.

¹⁶ Dafalvard (1998) obtains a (natural) price as a ratio of labour productivities - the estimative value is equal to the objective value of the goods in terms of relative marginal productivities (relative labour costs). This result poses a series of problems. On the one hand, there is no convention in Turgot's writings that defines exchange in terms of labour value; costs measured as labour time influence the price of the equilibrium but not the process of determination.

¹⁷ "Le seul moyen d'énoncer la *valeur* est donc, comme nous l'avons dit, d'énoncer qu'une chose est égale à une autre en valeur; ou, si l'on vous, en d'autres termes, de présenter une valeur comme égale à la valeur cherchée. La valeur n'a, ainsi que l'étendue, d'autre mesure que la valeur; et l'on mesure les valeurs en y comparant des valeurs, comme on mesure des longueurs en y appliquant des longueurs; dans l'un et l'autre moyens de comparaison, il n'y a point d'*unité fondamentale* donnée par la nature; il n'y a qu'une *unité arbitraire* et de convention. Puisque, dans tout échange, il y a deux valeurs égales, et qu'on peut donner la mesure de l'une en énonçant l'autre, il faut convenir de l'unité arbitraire qu'on prendra pour fondement de cette mesure ou, si l'on veut, pour élément de la numération des parties dont on composera son échelle de comparaison des valeurs." (Turgot, 1769: 96).

3. The distribution of gains within the competitive exchange

At this point, the justice of exchange cannot come from a normative theory –where the equality of gain between the parties is the condition of the exchange– because the social contract has already qualified the result as just. However, in Turgot, the social contract is a necessary condition but not enough for the subjects participating in the process of exchange. Turgot provides the answer as to why an individual does not leave the social contract: the result will be unfair and imprudent.

Taxer le prix des denrées pour régler le prix courant lui-même, c'est-à-dire pour le tenir bas en faveur des acheteurs, c'est d'abord commettre une injustice ; car, pourquoi favoriser plutôt l'acheteur que le vendeur ? Ne contractent-ils pas tous, avec la même liberté, avec la même propriété, l'un de sa marchandise, l'autre de son argent : ne sont-ils pas égaux aux yeux de la loi et du magistrat ? C'est de plus commettre une injustice imprudente, car si la politique pouvait ici faire pencher la balance inégalement, ce devrait être plutôt du côté du vendeur. (Turgot [1753-4a]: 384).

Turgot presents the competitive process –subject to the social contract– as an alternative to a magistrate –outside the social contract– who is unjust, and also incapable of discerning the appropriate actions at a given time and place –i.e. without the virtue of prudence¹⁸. The fruitless searching for the market price, given the uncertainty introduced by the economic dynamic, is for Turgot the example of the absence of insight. He points out that an individual cannot calculate the optimum price because of the dispersion of knowledge generated by the economic dynamic itself (see also Turgot [1770a]: 311). Therefore, the magistrate is not capable of finding the fair price or establishing a unique price in the market.

Il (le Magistrat) cherchera sans doute à fixer le prix courant à un taux équitable par lequel ni le consommateur, ni le vendeur, ne soit lésés, c'est-à-dire à faire ce que la concurrence ferait bien plus sûrement sans lui. (Turgot [1753-4a]: 385).

Prudence is a virtue of the competitive market because it is capable of finding the price which is in the interest of every participant –i.e. an equal gain to each *homo lumens*. The process by which the outcome is determined is not the main question but rather which solution is left: a predictable result which reflects the

¹⁸ The *Dictionnaire de l'Académie française* (1740) defined prudence as : “Vertu par laquelle on discerne ce qu'il faut suivre, & ce qu'il faut éviter dans la conduite de la vie”.

bargaining power of the parties in the exchange. So any gain above the expected result can only be qualified as unlawful behaviour.

Dans tout échange, dans toute convention qui a pour base deux conditions réciproques, l'injustice ne peut être fondée que sur la violence, la fraude, la mauvaise foi, l'abus de confiance, et jamais sur une prétendue inégalité métaphysique entre la chose vendue et son prix. (Turgot [1770b]: 176).

As we have seen, Turgot constructed the hypothesis of private property on the competitive process of exchange to ensure the justice of a result which is the unique value of the good. At this point, Turgot cannot permit the competitive process to lead to the same place as the magistrate.

le prix du blé étant égal, on paye le pain plus cher dans un lieu que dans un autre, or, il est évident que cette inégalité est toujours au préjudice du consommateur dans le lieu où le pain est le plus cher ; il est certain que dans celui où il est le plus bas, il l'est au-dessus du prix fondamental. (Turgot [1753-4a]: 386).

Without a common price in the exchange process, Turgot's theory of value was completely invalid, both as a practical alternative to public prices and as a theoretical alternative to the doctrine of intrinsic value. However, Turgot turns the equity of the competitive exchange into a corollary of a law of one price. So equal gain springs while a broad conceptual apparatus is employed by Turgot in the search for the properties of *Existence* and *Unity* in a bargaining problem. Hence, Turgot takes up two analytical elements already employed in several essays during the fifties: the concept of equilibrium and rational behaviour. They allow him to guarantee a competitive exchange within the required properties.

3.2. Equilibrium

Turgot is familiar with the work of Boisguilbert, where equilibrium appears as the situation that establishes "prix de proportions" when the participants obtain reciprocal utility, in other words, a situation far removed from loss (Faccarello, 1986).

Or, comme, dans cette manne de grains, elle n'est pas toujours aussi libérale dans une contrée qu'elle l'est dans une autre, et qu'elle les donne avec profusion dans un pays, et même dans un royaume, pendant qu'elle en prive un autre presque tout à fait, elle entend que par un secours mutuel il s'en fasse une compensation pour l'utilité réciproque, et que par un mélange de ces deux extrémités de cherté extraordinaire ou d'avilissement de grains, il en résulte un tout

qui forme l'opulence publique, qui n'est autre chose que le maintien de cet équilibre si essentiel, ou plutôt l'unique principe de la richesse, quoique très inconnu aux personnes qui n'ont que de la spéculation.
(Boisguilbert, 1707: 48).

Although we are far from a formalisation of exchange in terms of utility, Boisguilbert suggests a distribution that, for each of the participants, supposes a gain in terms of utility. Turgot continued this analytical tradition, situating equilibrium in the sphere of exchange and defining the hypotheses that permit equity. The result of the competitive process can always be attained and the unique result is common for all participants.

Existence is a property inherent to the concept of equilibrium used by Turgot in the process of exchange. It should be noted that the analogical comparisons referring to equilibrium that accompany Turgot's discourse in the different areas of knowledge are a new path, but also a rhetorical instrument used as a shortcut that goes from intuition to evidence without passing through demonstration (Perrot, 1983). However, the concept in itself has for Turgot certain peculiarities that must be considered in order to understand the theoretical instruments of which it makes use and how. His article in the field of Physics written for Diderot and D'Alembert's *Encyclopédie* uses an idea of equilibrium that he transferred to the formalisation of the market¹⁹. *Expansibilité* (1756) deals with the statics of fluids, concluding originally that expansibility is not a specific property of air but rather of any substance in a vaporous state (Hankins, 1985). In his analysis, Turgot deals specifically with the consequences of the collision, in the case of fluids, between the forces of expansion and compression.

Il suit de notre définition, que ces fluides ne sont retenus dans de certaines bornes que par la force comprimant d'un obstacle étranger, & que l'équilibre de cette force avec la force expansive, détermine l'espace actuel qu'ils occupent.
(Turgot [1756a]: 274).

Opposing forces guarantee the existence of a state of equilibrium, characterised by the property of providing an observable result for the process, in this case the specific space. Furthermore, a fluid added to

interconnected beakers, under the weight of gravity, disperses until the level in each of the compartments is the same.

La tendance qu'ont les parties d'une fluidité pesant à se mettre au niveau (...) est moins un changement d'état du fluide (...) qu'un transport local d'une certain partie du fluide en masse par l'effet de la pesanteur, transport absolument analogue su mouvement d'une balance qui se met en équilibre. (Turgot [1756a]: 276).

The concept of equilibrium is illustrated by the analogy with fluid in two senses. Firstly, it is the end of a process of opposing forces with the particular capacity of determining a measurable result. Secondly, a compensatory effect between parts through a relationship of interdependence is a property of balance. Therefore, a concept charged with a high level of subjectivity is presented, which will be reflected in his economic writings: “Les augmentations ou les diminutions reparties sur tous, les pertes et les gains compensent entre tous, font qu'il n'y a de lésion pour personne dans le changement...” (Turgot [1770a]: 312). The next step explains how this result is achieved when each opposing force pursues an *'amour de soi'* regulated by justice.

3.2. Rational behaviour

In 1750, Turgot wrote two letters against George Berkeley's theory of knowledge which gave rise to his article *Existence* (1756). In them, certain sensations which are similar in all individuals prove the existence of objects that follow the same laws: “Il est visible et incontestable qu'une hypothèse dont toutes les conclusions sont ainsi vérifiées par l'expérience est réelle, et par conséquent que mes rayons visuels, mon objet, mon œil, mon microscope, existent véritablement hors de moi” (Turgot, 1750: 773). Turgot tackles the cognitive process that links objects, sensations and individuals under the form of personal hypotheses to be assayed. Hence, reason allows individuals to dominate their passions and become beings of will who act in search of the truth (Hervier, 1977). Therefore, decision-making becomes a process shaped by

¹⁹ It is a common case, since throughout the course of the 18th Century, the scientific method was considered a general philosophy freely used by other disciplines, and Turgot was no exception (Perrot 1988: 246).

motives, purposes and means, understanding rational choice as that which follows the laws of behaviour that are inherent to the individual.

This hypothesis of rationality – or the behaviour of “intelligent beings” – is introduced in *Plan d'un ouvrage sur le commerce* to explain the link between goods and individual utility.

...comment les différentes objets de la nature servent à nos besoins et à nos plaisirs que est la causa de la liaison qui se trouve entre l'application de ces objets à nos organes et à nos sensations, et comment par cette liaison notre âme sort d'elle-même, cesse d'être isolée au milieu des êtres, connaît l'univers, en jouit, forme avec d'autres intelligences semblables à elle une société dont les membres, par des sacrifices mutuels, vendent, pour ainsi dire, et achètent le bonheur. (Turgot [1753-4a]: 380).

Pleasure/need is the motivation for actions but the link is not direct. Mental process (objects and sensations) is placed in the middle and allows choice to be qualified as rational. Hence, what you prefer does not necessarily coincide with what gives you the most pleasure. In Turgot, the question of rational action has been transferred from the preference/utility relationship to the area of cognition.

Which laws exactly describe an individual decision and qualify the behaviour as rational? In other words, how does a *homo lumens* make decisions? For Turgot, both John Locke and Etienne Bonnot de Condillac²⁰ establish the foundations on which to base reflections about the formation of knowledge. Condillac's statue is presented as a support for sensations; the senses that provide the individual with impressions of four operations – perception, attention, conscience and reminiscence – will become the material required for the formulation of knowledge. From here on, Turgot distances himself from Condillac and authors he defines as *idealists* (they reject any ideas other than sensations themselves). Specifically, the relationship between the state itself and its projection onto the objects that surround us is the problem tackled in *Existence* (1756), which Turgot also wrote for Diderot & d'Alembert's *Encyclopédie*²¹. This essay examines the

²⁰ Condillac considers it necessary to understand the functioning of the machine in order to know how these operations must be carried out (reason). In the same way, Condillac uses sensualist constructs to define the capacities of the individual: the capacity to appreciate the value of things linked to practical life (judgement), the capacity to find new combinations of ideas received by the senses (inventiveness) and the capacity to manage operations of understanding, using them with ease (spirit).

²¹ *Existence* (1756) earned Turgot great prestige among the Enlightenment thinkers. For example, in a letter to D'Alambert in 1770, Voltaire stated that the quality of the article was as great as that of its author: “Mon cher maître, mon digne philosophe je suis encore tout plein de

process of reflection which, unlike Condillac, he does not consider a natural consequence²², concluding that the existence and not the presence of these objects is the origin of our needs and the motivation behind our movement.

In *Existence* (1756), Turgot presents a *Tableau solide* of impressions made by the objects we perceive; an ideal universe that changes at each moment and which our memory compares to observe the differences, to become aware of the ideas of change and the movement of objects. The presence of objects is a source of desire and fear. Therefore, distances are measured by the sensation of pleasure or pain they seem to produce in us. But just as objects change position, the subject also moves “comme un pilote conduit une barque sur une mer semée de roches et couverte de barques ennemies” (Turgot [1756b]: 523). Unlike the tangible sea proposed by Berkeley²³, the world in which the individual acts is intellectual and goes beyond the limits of sensations. The objects that we do not perceive might not have disappeared (as the fog blinds the navigator) and objects that move away from us until they are lost can be followed beyond the reach of the senses.

Si un objet emporté loin du spectateur par un mouvement rapide se perd enfin dans l'éloignement, l'imagination suit son cours plus loin que la portée des sens, prévoit ses effets, mesure sa vitesse ; elle conserve le plan des situations relatives des objets que les sens ne voient plus ; elle tire des lignes de communication des objets de la sensation actuelle à ceux de la sensation passée ; elle en mesure la distance ; elle parvient même à prévoir les changements que ont d'arriver dans cette situation, par la vitesse plus ou moins grande de leur mouvement. L'expérience vérifie tous ces calculs, et dès lors les objets absents entrent, comme les présents, dans le système général de nos desirs, de nos craintes, des motifs de nos actions ; l'homme, comme le pilote, évite et cherche les objets que échappent à tous ses sens.

(Turgot [1756b]: 523).

M. Turgot. Je ne savais pas qu'il eût fait l'article Existence. Il vaudrait encore mieux que son article.” (cited in Laurent, 1997: 6). Further evidence of his success is revealed when, in 1759, Diderot suggests Turgot should continue with his collaborations, specifically with an article about money and interest, always under the protection of the anonymity: “Chosissez les articles qui vous conviendront. Vous pouvez être sûr que je vous garderai le secret le plus inviolable et que vous ne serez point exposé à l'inconvénient qui pouvait vous arrêter.” (in Vigreux, 1947: 163). The topics for the articles proposed by Diderot were as follows: Humidité, Idée, Idéalisme, Intérêt de l'argent, Impôt, Immatérialisme, Inspecteur, Intendant de Province. (Schelle, 1913-23, I: 594).

²² “C'est proprement la réflexion qui distingue, compare, compose, décompose et analyse; puisque ce ne sont-là que différentes manières de conduire l'attention. De-là se forment, par une suite naturelle, le jugement, le raisonnement, la conception, et résulte l'entendement.” (Condillac, 1746: 76).

The concept of rationality is linked to a subjective calculation (based on personal perception) and confirmed by experience. Unlike *idealistic* authors, this is a calculation that is not born of sensations; the result is a measurement in terms of pleasure/pain, but not the operation, because reason is not limited to calculation. A new chain of cause-effect relationships appears, through which our “système général” is made up of present objects (linked by a perception of the senses) and absent objects, which are in the majority and are linked through a relationship of causality that allows us to perceive them as existing. There is not a given and exogenous set of data which are ordered by means of a calculation in terms of pain and pleasure. It is the agent who constructs both the set of existing objects –not all of them with the same probability²⁴– and the relationship between them in terms of pain and pleasure. Therefore, the concept of rationality is subject to this *general system of motives* because this is the rule which judges the existence of what is perceived (Turgot [1756b]: 527). The individual acts rationally when he judges according to *existence* and irrationally when he follows presence, sensations or illusions.

But similarly, objects can become existent for someone *similar* who is situated in the same place as us.

...objets que nous ne voyons pas, mais qui, par un enchaînement quelconque des causes et des effets, agissent sur ce que nous voyons ; que nous verrions, s'ils étaient placés dans une situation et à une distance convenable, et que d'autre être semblable à nous voient peut-être dans le moment même. (Turgot [1756b]: 524).

Hence, Turgot must deal with the problem of situating the individual as the elemental subject. This reflexive spectator has been presented together with units of measurement and principles of inertia, but theoretical problems appear when it comes to formalising social relations – equality, aggregation, symmetry – (Perrot, 1983). Rothschild (2001) describes how Condorcet tackles the practical problems implied by

²³ George Berkeley questions the existence of a separate world of perception. Riskin (2002) suggests that his rejection of the mind's capacity to form ideas from sensations and through abstraction leads Berkeley to conceive of a single connection between the real world and the senses: touch. Only the tangible world is real; the visible world provides signs that allow us to navigate through the physical world.

²⁴ “Mais que l'existence des objets soit passée, présente ou future, nous vu qu'elle ne peut nous être certifiée, si elle n'a ou par elle même ou l'enchaînement des causes et des effets un rapport avec la conscience moi ou de notre existence momentanée (...). Cet état d'incertitude ne nous présente que la simple notion possibilité qui ne doit pas exclure l'existence mais qui ne la renferme nécessairement. Une chose possible, qui existe, est une chose actuelle; ainsi toute chose actuelle est existante, et toute chose existante est actuelle, quoique existence et actualité ne soient pas deux mots parfaitement synonymes parce que celui d'existence est absolu et celui d'actualité est corrélatif de possibilité.” (Turgot [1756b]: 529).

aggregation, and Turgot, in *Observations sur la mémoire de M. de Saint-Péray* is particularly critical of theoretical assumptions of aggregated behaviours so frequently used by physiocrats. But beyond the choice of instruments, the paradox of a new commercial society that makes individuals more equal but which, at the same time, requires inequalities for the sake of progress is present in both authors. The responses offered by Turgot in *Lettre de Turgot à Madame de Graffigny* (1751) is based on the potential equality of all virtues in all individuals, hence the “égalité des esprits”, although they do not become real in everyone (greater strength, passion or courage)²⁵, hence the inequality in the result; it is not inequality that contributes to progress but rather those real virtues that are present, through having been developed.

Regardless of the personal capacities derived from potential virtues, each individual presents a different *Tableau solide*, not just interpersonal but also intertemporal. However, Turgot needs a content of social relations based on links between equal individuals; firstly, because a social atom is required for his scientific method, and secondly because of the effect a relationship between unequal individuals would have on equality.

L'inégalité réelle entre les âmes nous sera toujours inconnue et ne pourra jamais être l'effet de nos raisonnements. Tout le reste est l'effet de l'éducation; je dis cette éducation qui résulte de toutes les sensations, de toutes les idées que nous avons pu acquérir dès le berceau, à laquelle tous les objets qui nous environnent contribuent.
(Turgot, 1751: 338-9).

This tension could explain why Turgot uses the concept of similitude –perhaps taking the Cartesian causal connection²⁶ as a reference. In effect, the *liaison des idées*, so essential in the sensualist approach of Condillac, D’Alambert or Helvétius, disappears in *Existence* (1756) in favour of a causal relationship with greater protagonism. Individual judgment is a representative expression of the influence objects have on the

²⁵ *Lettre de Turgot à Madame de Graffigny sur les lettres d'un péruvienne* (1751) is a plea regarding the need for inequality in individual conditions and a forecast about their future increase. Turgot rejects proposals for equidistribution as a system because it would castigate the virtues that have already appeared (real). He proposes that education should be used to exploit the potential virtues of those who have not developed them.

²⁶ Vartanian (1953) offers a reading of the French enlightenment that changes perspective, from a position of receiving Newton, Bacon and Locke to an important continuity of Cartesian thought. Harré (1980) demonstrates the ambiguity of Locke’s ideas in Diderot, as well as the short life of sensualist empiricism in D’Alambert.

individual, on the basis of the senses and with sensations as the first consequences. Judgment is not science; therefore it ends before the analysis of ideas, having assured the reality of external objects. But Turgot goes even further, by endowing the individual with the capacities – imagination and experience – to form, verify and reconstruct their ideas. Hence, and given the existence of constant laws of functioning for natural and social phenomena, individuals with similar senses will discover, soon or later and by comparing their hypotheses, the same relations. In Turgot, this cause-effect chain is able to situate, in our *general system* of decision-making, objects that are never perceived but which exist, or are at least probable, through the simple causal relation of other similar individuals.

...ce même enchaînement de causes et d'effets établit des rapports de distance et d'activité entre nous et un grand nombre d'êtres, que nous ne connaissons que dans un très-petit nombre d'instants de leur durée, ou qui même ne parviennent jamais à notre connaissance. (Turgot [1756b]: 529).

Ultimately, sensualist rationality in Turgot is presented on the basis of a construction of a series of *existing* objects associated to the individual by a distance or consequence measured in terms of pleasure or pain. Just as social contract cannot be disassociated from the idea of private property, the issue of exchange in Turgot similarly cannot be understood without his concept of cognitive system. The main reason is that his theory of mental process is not indifferent to why the competitive market should be better than any other system of allocation. Once the process of exchange has been initiated, the appearance of the result is certain, as he expresses in *Expansibilité* (1756), and this will be unique – “le vrai prix de chaque chose” – if the participants fulfil the hypothesis of behaviour described in *Existence* (1756). In *Plan d'un ouvrage sur le commerce*, Turgot analyses two cases where this result is achieved: an isolated exchange (two individuals and two goods) and a multiple exchange (various individuals with two different goods).

3.3. Isolated exchange

In both cases, Turgot formulates his analysis within the framework of an economy of pure exchange. For the first, he begins by listing the elements that make up the process.

...le désir de part et d'autre est le motif de l'échange, et c'est de la comparaison des désirs réciproques que naît l'évaluation ou l'appréciation des choses échangées, car le prix d'une chose, le motif qui engage le possesseur à s'en défaire, ce motif ne peut être qu'un avantage équivalent ; et il ne juge que cet avantage est équivalent que par le désir qu'il peut en avoir. Ainsi, tout ce qui peut être possédé et désiré peut être l'objet d'un échange et entrer dans le commerce. (Turgot [1753-4a]: 379).

We see a line of continuity in his thinking about value and price, since these are the same concepts used by Turgot in his later article *Valeurs et Monnaies* (1769), and with the same result; exchange is carried out at a price obtained from the average of individual appreciative values, in other words, the gains derived from a subjective comparison of the value of the goods that comply with the hypothesis of ownership²⁷. Turgot abandons the physical explanation of zero-sum exchange that Aristotle had turned into dogma (Theocarakis, 2006) because gain is the only reason for the transaction (Turgot, 1769: 552).

On the basis of the text *Valeurs et Monnaies* (1769), Groenewegen (1970) and Erreygers (1990) have demonstrated the impossibility of determining a uniform rate of exchange. As a solution to this positive exchange (without a predetermined rule) which equals gains, Erreygers (1990) proposes a hypothesis of “transparent traders” in which agents reveal their estimative values, whilst recognising that it is unviable for Turgot’s model of exchange because “...chacun tiendra secrète la comparaison qu’il a faite intérieurement de ses deux intérêts” (Turgot, 1769: 288). Defalvard (1998), on the other hand, uses the condition of agent symmetry proposed previously by Hervier (1997), but this also supposes a contradiction with the initiation of the exchange: “Mais, chacun fait ce calcul de son côté, et les résultats peuvent être différents” (Turgot, 1769: 288). However, in *Valeurs et Monnaies* (1769), Turgot does establish, together with ‘amour de soi’ regulated by justice, two common elements to the individuals who take part in the exchange and which are separate from their initial assessments: behaviour and interest in attaining an end result.

...tous deux sont encore animés par un intérêt général et indépendant de toute comparaison; c'est l'intérêt de garder chacun le plus qu'il peut de sa denrée, et d'acquérir le plus qu'il peut de celle d'autrui (...). Celui-ci, tenant de son

²⁷ The “*valeur appréciative*” is influenced by two considerations: the usefulness of a commodity for satisfaction and the scarcity of the object (Hervier, 1977).

côté la même conduite, ils disputeront sur les conditions de l'échange et, comme ils ont tous deux un grand intérêt à s'accorder, ils s'accorderont à la fin... (Turgot, 1769: 288-9).

Turgot's cognitive process considers that experience and interdependence allow agents within the process of exchange to know each object and each situation, even that which is not their own; reciprocal comparison puts agents in a suitable position and distance for the objects present in each one (in this case, estimative values) to become existent for both parties, given "que d'autre être semblable à nous voient peut-être dans le moment même" the same thing. Also in the bilateral exchange presented in *Reflexions* (1766), once each party has calculated his initial appreciative values, agreement is reached through the rapprochement of the participants: "S'ils ne sont pas d'accord, il faudra qu'ils se rapprochent" (Turgot, [1766b]: 552). Turgot replaces the Aristotelian cooperation of bilateral exchange (Dos Santos, 2002) with the rational behaviour of the subjects participating in the process of exchange and which will allow for a unique price in the exchange.

3.3. Reciprocal competition

In *Valeurs et Monnaies* (1769), Turgot does not fully tackle multiple exchange (several individuals with two different merchandises)²⁸ which is described in *Plan d'un ouvrage sur le commerce* and *Réflexions* (1766). The difference with isolated exchange is in the amplitude of the concept of competition towards greater conflicts of interest: (i) between buyer and seller, (ii) between patience and necessity, (iii) and between agents pursuing the same objectives. Turgot uses the term *Concurrence réciproque* to introduce the effects of a greater number of individuals in the process of price determination.

Dans la concurrence réciproque entre les vendeurs et les acheteurs, le prix est fixé par le débat entre la totalité de vendeurs, d'une part, et la totalité des acheteurs, de l'autre, au lieu de l'autre par le débat entre deux personnes seulement. (Turgot [1753-4a]: 383).

²⁸ In *Valeurs et Monnaies* (1769), Turgot presents three different exchange situations: three isolated exchanges (the "valueless surplus", two individuals and two commodities and four individuals with two different commodities). The explanation of a multiple exchanges (several individuals with two different commodities) was not completed. Groenewegen (1970) adds two other cases to the latter exchange situations

Competition becomes a conflict of interests in relation to a certain amount of merchandise, which has initiated the process, and not to a price that will finally become homogeneous, both within demand and supply. In fact, the final rate of exchange or current price is also termed “common price”, as it is the same for all; hence, there is no exchange at prices of disequilibrium, as used by Faccarello (1992) or Ravix & Romani (1997), because such an exchange would not comply with commutative justice or equality of gain. The current price can only be different in accordance with each multiple exchange because “tant que l’on considère chaque échange comme isolé & en particulier, la valeur de chacune des choses échangées n’a d’autre mesure que le besoin ou le désir.” (Turgot, [1766b]: 552).

Exchange also takes place in the conditions attained by means of convention, in other words, the final agreement or result of equilibrium in a process of interrelation that Turgot later termed *tâtonnement*.

Le cours du commerce libre suit toutes ces variations sans aucun inconvénient; tous les changements qu’il amène se font par degrés insensibles: le débat entre chaque acheteur et chaque vendeur est une espèce de tâtonnement que fait connaître à chacun avec certitude le vrai prix de chaque chose. (Turgot [1770a]: 312).

Unlike the Walrasian case, there is no auctioneer who informs the participants of the reference price at which they can buy or sell because it is not predetermined prior to the exchange. This role is not fulfilled exactly by the merchant, who “ne règle le prix ni d’achat ni de la vente”, but he will be the one who guarantees the unique price. As occurs in the sphere of production, Turgot presents a hypothesis of behaviour linked to the description of an ideal figure²⁹. In the *circulation des marchandises*, the merchant is the particular vehicle that enables competitive equilibrium to be achieved if the participants comply with the hypothesis of rational behaviour.

in order to complete Turgot’s theory, a multiple exchanges (several individuals with several commodities) and an inter-temporary exchange (present against future goods).

²⁹ In the case of agricultural production, Turgot presents a host of protagonists – *fermier*, *métayer*, *propriétaire foncier* –, all components of a capitalist productive fabric (Turgot [1766a]: 454). The protagonist of agricultural production becomes the *fermier* or *entrepreneur de culture* who is characterised by two faculties – the possession of large capital and a way of running the enterprise – which make him the *productor excelente* because he wishes to increase the size of the farming enterprise to achieve the *Grande culture* (see Fontaine, 1992).

Through his extensive experience, the merchant is presented in the exchange with broad knowledge of the market that Turgot encompasses in his capacity to determine the *fundamental price*³⁰.

... toutes les opérations du commerce ont pour base la connaissance exacte de la valeur des denrées et de toutes les circonstances qui concourent à fixer cette valeur, puisque c'est sur la différence des prix des denrées, dans les lieux et les temps différents, combinée avec les frais de transport et de garde que le négociant appuie toutes ses spéculations. (Turgot [1753-4a]: 383).

The complexity of reciprocal competition generates sufficient uncertainty so that, as mentioned previously, authority is incapable of determining the natural price. Turgot introduces an agent into this scenario who “directs” the exchange without determining the price³¹. Merchants provide the participants with sufficient information to reach a common price³². With these resources available to the participants, the reciprocal relations established by means of *tâtonnement* permit this level of rapprochement between *similar* subjects, each of whom turns the estimative values of his competitors into *existing objects* in his own decisions³³. The information contributed by the merchant, together with the hypothesis of rational behaviour, enables a unique price to be achieved, although the result is subject to the level of linkage, of reciprocity and the experience of the participants.

Il n'est jamais possible que le prix courant soit trop fort, ni trop faible ; il faudrait pour cela que la marchandise considéré en elle-même eut un *prix naturel* (...) c'est ce qui n'est, ni peut être, puisqu'il n'y a que la comparaison du besoin qu'on tous les acheteurs collectivement avec l'offre de tous les vendeurs pris aussi collectivement qui en établisse la valeur vénale. (Turgot [1753-4a]: 384).

³⁰ This current price is related to a minimum supply price called *prix fondamental* (Groenewegen 1970: 181; Romani 1982: 118). The latter has been defined as a minimum supply price or, long-run balance price and it is thoroughly well-matched with the theory of value and exchange (Groenewegen 1970: 181). It expresses the degree of difficulty a man meets in producing a commodity and therefore, it was a guide in the transformation of individual estimate value into a current price. It is the estimate value by merchants and it covers every cost of production including a normal rate of profit (Turgot 1769: 472). The role of this fundamental price in Turgot's writings has been interpreted of very different form: a cost of production for a walrasian approach (Bourrinet, 1966), in some cases, and in others a center of gravitation for an empirical, arbitrary and nonteorizable current price (Ravix & Romani, 1983).

³¹ “Il s'instruit par des essais réitérés, par ses succès, par ses pertes, et acquiert un tact dont la finesse, aiguillée par le sentiment du besoin, passe de bien loin toute la théorie du spéculateur indifférent. (...) découvrir les causes et les effets cachés de cette multitude de révolutions et de leurs variations continuelles; remonter aux ressorts simples dont l'action toujours combinée, et quelquefois déguisée par les circonstances locales, dirige toutes les opérations du commerce”(Turgot 1759: 124).

³² In the 18th Century, there are no agents defined by a motor of action linked to innovation or the unchecked appetite for profit, but rather merchants installed in social life making decisions within their surroundings (Braudel, 1979: 354).

It is possible for the current price not to coincide with the *prix naturel* or *valeur vénale*, in other words, with the fair price according to the hypotheses of private property and rationality. The existence of an exchange at a different price other than the unique price is an error on the part of the agent, which can be corrected with experience or information, and not on the part of the process.

Il est certainement possible qu'un particulier soit trompé en achetant quelque chose au-dessus du prix courant, s'il a négligé de s'en instruire et s'il s'en rapporte aveuglément au premier mot d'un marchand qu'il ne connaît pas, mais il n'est jamais possible que le prix courant soit trop fort, ni trop faible. (Turgot [1753-4a]: 384).

The hypothesis of rationality is constant, but experience situates the agents in progressively more developed scenarios. In the case of exchange, and as in the case of ownership, Turgot makes a distinction between historic scenarios where the generalisation of exchange is the advanced stage³⁴. For example, in his *Lettres au contrôleur général Terray sur le commerce de grain* (1770) all exchanges do not take place in the market³⁵, although experience increases the amounts of merchandise offered by producers (see also Turgot [1766a]: 475). Therefore, as the exchange progresses, the measurement of value improves (Hervier, 1997). Experience enables merchants to acquire the information required to determine the fundamental price and so all the participants, through the market, construct knowledge, interpret information and create their predictions: “Dans cette circulation, qui, par l'échange réciproque des besoins, rend les hommes nécessaires les uns aux autres & forme le lien de la société” (Turgot [1766a]: 537). Within these links, all the necessary elements come together to fulfil this law of one price.

Although the fundamental price becomes a guarantee of the existence of this unique natural price, *Plan d'un ouvrage sur le commerce* closes by raising the possibility that both prices do not coincide, even when the

³³ “Le commerce se charge des transports, des magasins, des assortiments et de l'attente. Les besoins réciproques des vendeurs et des acheteurs les engagent à se rapprocher (...) Ces points deviennent naturellement les rendez-vous du commerce ; les habitations de ces entremetteurs s'y rassemblent.” (Turgot, 1767: 201).

³⁴ Turgot joined other philosophers of progress, such as Voltaire, Châtelet and Fontenelle, although his theory emphasises this connection between progress and the economy: how societies in the long run tend to develop towards greater perfection is to be sought in the economic sphere (Meek 1973: 9). Turgot proposed his *four stages theory* as a measure of the rate of development. Having introduced the various different agreements that landowners may make with the farmers, Turgot described the transition from the agricultural society to the commercial stage. This fourth and final phase is where Turgot develops his economic theory (Finzi 1982: 15)

competitive process is ‘perfect’. Hence, the concept of extra gains appears along with a problem for commutative justice by permitting one of the parties in the exchange to lose or gain too much. For Turgot, this does not suppose a contradiction of the *notion de moyenne* if the agents change their reference from a specific exchange in time towards a period that encompasses several exchanges. In the absence of fluctuation, it is possible to take the fundamental price as the reference price for the period and guarantee that the gains of the exchange will be equal at the end of the period; the problem of equity is transferred to the stability of the market. This is the solution proposed by Turgot, so that the calculation of gain is not carried out separately for each transaction but rather for the period in the form of a profit rate, which can then be referenced with the interest rate. Hence, exchange allows agents to intervene in accordance with its incentives in what Turgot calls *libre circulation*, the second meaning he gives to competition. Sector mobility as a mechanism for determination that permits a uniform rate of profit to be attained is one of Turgot’s most renowned contributions (Eatwell, 1983), although tackled almost exclusively within the sphere of production. But this raises the question of whether standardisation in the rate of profit occurs through the same mechanisms in the *circulation de l’argent* and the *circulation des marchandises*, and whether this is the element that links both spheres in Turgot. On the other hand, the incentives generated by extraordinary gains transfer greater importance to inequality in an exchange constructed on the basis of a similar *homo lumens*.

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³⁵ “En effet, une très grande partie du grain qui se consomme ne se vend ni ne s’achète, tout cultivateur qui recueilli vit sur sa récolte: non seulement il vit lui-même, mais il nourrit ceux qui travaillent pour lui.” (Turgot [1770a]: 312).

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