Learning from the debate on externalities

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According to the opening sentence of Tibor Scitovsky's 1954 paper, "the concept of external economies is one of the most elusive in economic literature". Had Scitovsky written his paper forty years later, I am convinced that his opening sentence could have been left unchanged. Indeed, the concept of an "externality", which was coined in the years following Scitovsky' paper as a more general and more convenient way of referring to the phenomenon I propose to examine here, is still one of the most vaguely defined concepts of economic theory and one which seems to be a source of considerable embarrassment for economists. As late as 1970, after a large number of papers had been published on external economies and externalities and virtually all the definitions which are available today had been provided on one form or another, Kenneth Arrow could still claim that "nowhere in the literature does there appear to be a clear general definition [...] of "externality".

While criticism directed against various aspects of economics is common, it is unusual that it be aimed at an inability to define its basic concepts. However, the concept of an externality seems to be an exception. Three symptoms unambiguously reveal the very peculiar nature of this concept from this point of view. The first symptom is the following: the two authors who have been by far the most widely quoted in the discussion of this concept, Arthur Pigou and Ronald Coase, have never used the term "externality" or even the older expression "external dis/economies" except, in the case of Coase, in discussing those who refer to it, and in the case of Pigou, in referring to a phenomenon that is somewhat different from the one which was to influence economists' views on externalities.

The second symptom is the fact that the importance accorded to this phenomenon by the community of economists has widely fluctuated. For a long time, the discussion

concerned an important phenomenon (the so-called "pecuniary externalities") turned out to have been mistakenly identified as a case of genuine externalities. The word then referred to an economic curiosity involving only an apparently very marginal phenomenon. Still later, in the fifties and sixties, it became the central theoretical reference of the rapidly growing economics of pollution referring, in this context, to a widespread phenomenon. By this time, it had also become associated with the concept of "publicness", whose manifestations were pervasive. However, during the sixties and seventies, while the number of papers devoted to externalities increased dramatically, many of those who analyzed this phenomenon started to doubt whether it referred to anything very specific, and sometimes argued as if it was possible and preferable to dispense with it altogether.

The third symptom is simply the extreme variety of incompatible meanings attributed to the notion of "externality" by a number of eminent economists of various intellectual orientation. Indeed, all of the following expressions (or their equivalents) were widely used to characterize externalities: "lack of appropriate property rights", "market failure to reach Paretian efficiency", "interdependencies among consumption or production functions", "side (or third party, or spillover) effects", "impossibility of exclusion", "presence of (wholly or partially) unpriced inputs or of uncompensated services", "situation leaving room for a free rider (or free loader) effect" and "situation associated with excessive transaction costs". Some of these expressions are rather restrictive and others extremely inclusive, but it is clear that they are far from equivalent. Finally, to complicate the matter further, externalities have sometimes been associated in unspecified ways with such phenomena as publicness, jointness of supply and non-convexities, as well as with the so-called "pecuniary externalities".

When it comes to explain the peculiarities of the concept of an externality, my hypothesis is that it has always been a "residual" concept for economists. By this I mean that it is a concept which, rather than characterizing a specific phenomenon, is a counter-concept whose function is to designate what is *left aside* by a more basic concept. In the case of the concept of an externality, this more basic concept turns out to be the very concept on which economics is based: the concept of a market. Given that the concept of a market itself is, in some sense, too general and too basic to be defined in a very strict manner, it is hardly surprising that its counter-concept, the concept of an externality, has

also remained a kind of floating concept. However, I do not wish to claim that the concept of externality was *explicitly* characterized and understood as a residual concept in the early stages of its development nor that it has continued to be perceived this way during recent decades. Consequently, a historical survey of the various ways this concept has been understood and defined seems necessary in the present discussion. More precisely, by following the historical vagaries of the evolution of this concept, my objective is to show that, far from being the well-defined technicality that it is usually thought to be, an externality is nothing but a residual entity whose nature and very existence is strictly dependent on the way economists perceive the market of which it is a residual.

Consequently, this paper will not survey and discus every important contribution to economics which has been made with the help of the concept of an externality, but only those contributions which have been decisive in determining the very meaning of this concept. Through this discussion, I will try to show how and why the scope of this concept alternately expands and contracts according to whether the prevailing concept of the market was designed in such a way as to require, or not to require, the complementary concept of an externality. Finally, I will show that even with the wide acceptance of the neoliberal concept of an all embracing market leaving no room for externalities, the concept of an externality has survived with an alternative meaning, though not without introducing some confusion into economic analysis. I will conclude with a few methodological considerations related to the historical vagaries of this concept.

1 The origin of the concept and the banishment of the pecuniary externalities

When it was first coined, apparently by Paul Samuelson in the fifties, the noun "externality" filled the long-standing need in economic terminology for a word which would specifically designate the "external" character of economies and diseconomies which had been involved in a decades old ongoing debate. As for the expression "external economies", it had been used, long before, by Alfred Marshall when, in his famous discussion of increasing and decreasing returns, he distinguished "external economies" realized by a whole industry from "internal economies" realized by an individual firm. However, the issue was made more complex by Marshall's disciple, Pigou, who analyzed a more general phenomenon which he described in his *Economics of Welfare* as "divergences

between marginal social net product and marginal private net product." Actually, Pigou referred to cases akin to Marshallian external economies, but he considered them just one type of divergence, and apparently not the most important type. According to Pigou's more general characterization, divergences occur when "in some occupations, a part of the product of a unit of resources consists of something, which, instead of coming in the first instance to the person who invests the unit, comes instead, in the first instance (i.e. prior to sale if sales takes place), as a positive or negative item, to other people."

For Pigou, such divergences can be divided into three principal groups identifying these "other people" as respectively: "(1) the owners of durable instruments of production, of which the investor is a tenant; (2) persons who are not producers of the commodity in which the investor is investing; (3) persons who are producers of this commodity.". As for the first group, it is well known that the improvements (or deteriorations) of rented goods for which a tenant is responsible can be reaped (or supported) by the owner of those goods. However, this phenomenon is of a more juridical than economic nature and, since it is not really typical of what was to be called "externalities", it will not be discussed further here. It is the second group, the more general one (the "other people" involved not being limited to those in a specific situation) that was to become representative of what is known as an externality in modern analysis. According to Pigou, divergences of this group emerge when "one person A, in the course of rendering some service, for which payment is made, to a second person B, incidentally also renders services or disservices to other persons (not producers of like services), of such a sort that payment cannot be exacted from the benefited parties or compensation enforced on behalf of the injured parties". Of such a phenomenon, Pigou gave a great number of examples which constitute a somewhat heterogeneous but impressive list when one considers that it was published in 1920. Included in this list are uncompensated services or disservices associated with lighthouses, parks, public transport, afforestation, lamps at front door of houses, smoke from factory chimneys, scientific research, spoiling of houses' environment by neighboring factories, wearing out of the surface of roads by motor cars, commerce of intoxicants, "veblenesque effects" on people's level of satisfaction, purely competitive advertisement, deception in goods presentation, etc. Yet, it was the third group of divergences — involving "other people" producing the same commodity (in the same industry) — that explicitly referred to the Marshallian notion of decreasing and increasing returns. Pigou devotes his chapter XI to

this phenomenon that is illustrated by various modifications in the market costs incurred by an individual firm when the scale of the whole industry is increased. It was this third type of divergences that was to be at the center of one of the most memorable debates of the first half of this century: the debate about the "empty" boxes of increasing and decreasing costs.

This debate was to stretch from the twenties to the forties. Insofar as the question of the nature of externalities is concerned, its principal result was the distinction — made progressively through contributions of Knight, Viner and Ellis & Fellner — between pecuniary and technological externalities. This distinction was crucial because it resulted in an exclusion of the so-called "pecuniary externalities" — which corresponded roughly to Marshallian external economies and to the third type of Pigovian divergences — from the realm of phenomena to be considered under the heading of "externalities". Further, as economists came to regard the Pigovian divergences as a source of trouble for economic theory, this distinction amounted to the elimination of this source of trouble, at least insofar as "pecuniary externalities" — which, by this time, were the only ones that looked worthy of the attention of economists — were concerned. Indeed, if the debate about increasing and decreasing costs, involving internal and external economies and diseconomies, mobilized so many great economists and ignited so many passions, it was because divergences between marginal social net product and marginal private net product implied, according to Pigou, that (without governmental intervention) public welfare could not be maximized by market forces, which were directed only by *private* marginal costs. In this context, one understands how the conclusion that the most significant of the alleged divergences correspond to pure illusions reducible to a pecuniary phenomenon was received as a happy ending by most economists. In this debate, the crucial idea centered around the meaning of an economic rent. It is true that the expansion of an industry — which is out of the control of a firm and, in this sense, "external" to it — can increase the cost of some factors already employed by the firm and constitute a "diseconomy" for it. However, as explained by Ellis and Fellner, "if the expansion of an industry gives a factor a higher per unit remuneration... the units already being supplied earn producer's rents ... and rent is not a cost in social resources." In such a situation, no extra cost is incurred by society as a whole and there is consequently no reason to diagnose a divergence between marginal social net product and marginal private net product or to recommend government intervention. Thus, it is the market itself which takes care of the so-called "pecuniary

externalities".

In any case, in this paper, I am not especially interested in the role of government. I am interested, rather, in the nature of externalities. It is important to see how this debate on increasing and decreasing costs changed the very nature of externalities or, at least, the connotation of the term "external". More precisely, when, as a result of the debate, the sphere of significant divergences had been cleared of pecuniary externalities, which were associated with the type of divergence which Pigou said concerned only "persons engaged in the occupation" (or if one prefers, inside a given industry), economists were left with the second and more general type of divergence associated with the rendering of incidental services or disservices to persons who are in no way engaged in the industry in which those services or disservices are produced. As long as the emphasis was put (as it was with pecuniary externalities pertaining to the Pigovian third group) on economies or diseconomies that were simply *external to the firm*, externalities could not be said to be "external" to the market. Indeed, while external to the firm, those economies or diseconomies were *internal* to the industry and, since they resulted from a set of transactions in which the firm itself was involved, it would have not made sense to characterize them as external to the market as such. But when we consider situations (those pertaining to the Pigovian second group of divergences) concerning people who do not take part to the transactions going on in the industry, we face a quite different type of divergence.

Let us remember, however, that Pigou never used the term "external" to refer to divergences while Marshall's use of it did not refer to divergences of *this* type (Pigou's second group). Given this, why characterize the economies or diseconomies associated with these divergences as "external"? At first glance, it seems to be because they are external to the "other persons" (or firms) referred to by Pigou as those affected by services or disservices resulting from an activity under the control of a "Person A". There is no doubt here that this influence of an economic agent over the welfare of another is the crucial point. However, stigmatizing such *interactions* between economic agents would sound rather odd to economists used to manipulating general equilibrium models, were Pigou not to have added "that payment cannot be exacted from the benefited parties or compensation enforced on behalf of the injured parties". In such situations, benefited or injured parties are

in no way involved in market or non-market moves which affect their welfare. They are simply not players in any market game related to the benefits they enjoy or to the damages they incurred. Typically — think of the case of pollution —, these benefits or damages do not come through the market at all. Thus, it would be simply meaningless to pretend that the external economies or diseconomies they experienced are internal to industry or to the market as a whole; rather, they are *external to the market as such*. It was for reasons of this kind that, in contrast to pecuniary externalities, these genuine externalities have been named "technological externalities". It is true that this type of externalities was thought to be rather rare by most economists of the time, but since they *conflicted with the normal functioning* of the market, they constituted a challenging theoretical problem for economic theory or, at least, a somewhat troublesome phenomenon. By the end of the debate on increasing and decreasing costs, it became more and more common to regard genuine externalities in this way.

2 The meaning of being “outside the market”

But why would payments not be exacted and compensations not enforced? Why could some services and disservices be transmitted through the market where others could not? What does it mean for services and disservices to be rendered outside of the market? The problem here is that the nature of a market (as a theoretical concept) has never been unequivocally defined by economists, probably because the market is, in a sense, the very horizon of economic analysis. In such a context, it is hardly surprizing that the concept of an externality, which, as we have seen, represents in some sense what this vague structure leaves out, was itself left undefined. In any case, if one adopts a minimal view according to which a market is a place where goods can be exchanged, and considers that goods have to be appropriable and exchangeable (which is roughly the view advocated by Walras), one would conclude that anything which is scarce and useful but which cannot be exchanged because it cannot be appropriated must be left out of the market and would consequently be considered a source of externalities. Thus, the most natural way to characterize genuine externalities was through the absence of ownership, "the divorce of scarcity from effective ownership" to use Ellis & Fellner's consecrated formulation. Indeed, in his own definition of "divergences", Pigou very nearly suggests that most externalities on actual markets could be eliminated in principle by the establishment of property rights which would cause the resources involved "to come to the right person." For his part, Knight based his own

argument against Pigou on the proviso of private ownership. Clearly, one cannot count on the market to take care of that which cannot be appropriated.

Now, it was rapidly understood that the crux of the phenomenon was not the fact that some scarce commodities remain unappropriated and possibly unappropriable. Rather, the point is that activities exerted upon these unappropriated commodities affect the welfare of other parties, a phenomenon which was systematically analyzed for the first time by J.E. Meade in a famous 1952 paper which is often considered the starting point of the *modern* theory of externalities. Using the example of the interdependence between an apple-grower and a bee-keeper, Meade managed to formalize a concept based interaction between activities of agents interfering with one another's production function (which also could have been a welfare or a utility function). However, as was underscored by Scitovsky and Bator — and possibly anticipated by Pigou —, to be counted as an externality, such interdependence had to be "direct", in the sense that "it does not operate through the market mechanism" and in the sense of being "external to the price system, hence unaccounted for by market valuations." After all, everything in economics is a matter of interdependence. My utility depends upon the activity of my baker, but as Adam Smith pointed out in a famous passage, it is not by benevolence but by self-interest (and therefore through the market) that he is contributing to it. Thus, while such a situation is a clear case of interdependence, it would be absurd to describe it as a case of an externality because my baker's service is adequately *paid* through the market. If, by contrast, a case of interdependence is described as *external* and as different from what falls under the general rule, it is because "it does not operate through the market mechanism". In any case, in the tradition that dominated the fifties and remained quite important during the sixties, externalities were thought to be found anywhere the market mechanism failed to internalize — one could almost say to civilize — an interaction going on between economic agents.

In other words, when factors of production are "unpaid" (like Meade's bees which are unpaid by the apple-grower) or, more generally, when services remain "uncompensated" or "unpriced" or "free", then we must conclude that something is kept external to the market and that, therefore, externalities are present. In a formalized representation of a market, every agent has a utility function (and every firm has a production function) and such functions have various commodities (or factors) as independent variables. But, if some

commodities (or factors) are unpaid while being independent variables of a function of the type $x_1 = F(l_1, c_1, \ldots ; x_2, l_2, \ldots)$, these unpaid commodities (or factors) must be distinguished from those which are paid; therefore, they have to be put at the end of the function, "to the right of the semicolon." Thus, in the algebraic representation of externalities typical for this period, the semicolon became the crucial element since its role, in a utility or in a production function, was to separate the standard priced elements (those on the left of the semicolon) from the unpriced elements (those on the right of the semicolon), which are responsible for the externality. According to E.J. Mishan, for example, "the external effects in production may be exhibited by a production function of the form $x = x(a_1,\ldots a_m ; \tilde{a}_n,\ldots,\tilde{a}_w)$ where x is output, $a_1,\ldots a_m$, the priced inputs, and $\tilde{a}_n,\ldots,\tilde{a}_w$, the unpriced inputs». In this manner, it was made graphically clear that externalities are nothing but a name for *residual* activities which are left outside the market, "to the right of the semicolon".

Now, to understand what it means for an activity to be performed outside a market, we need to know what it means for an activity to be exerted *inside* it. For neoclassical economists, from Walras to Samuelson, a market was characterized by reference to the paradigms of a perfect competition and general equilibrium. On the one hand, a perfectly competitive market requires that many conditions be fulfilled, especially regarding the character of the goods to be exchanged through it (multiplicity of identical, easily appropriable and exchangeable units which are usually also assumed to be perfectly divisible and reproducible). With the market modeled in such a restrictive way, it is not surprising that many activities were considered to be going on outside of it. On the other hand, in a market represented by elegant general equilibrium models, prices of all those goods are strictly determined, given a few fundamental data characterizing the situation. In the context of such general equilibrium models, each good has to be *adequately* priced according to the rule of the market. Consequently, "unpaid", "uncompensated", "unpriced" or "free" goods or services appear clearly to be exchanged *outside* the market. In other words, if, when referring to *a highly demanding modelization of the price system* such as those implying perfect competition and general equilibrium, one defines "externalities" as activities external to such a price system, these externalities — which used to be considered rather scarce and looked for only in the bucolic realm of apple-growers and bee-keepers — become necessarily pervasive. These theoretical developments were sufficient to explain

how the concept of an externality became associated with a pervasive phenomenon, but to understand its rising practical importance, one has to turn to the sensibility to the problem of pollution which was quickly growing during the fifties and the sixties. During this period, the concept of externality was put at the very center of economic debates about government intervention since it was seen as the natural candidate in explaining why ecological problems remained unsolved by the market.

In a sense, this idea has been generalized to its extreme limit by Francis Bator who associated externalities with the cause of *any form* of "market failure" to reach a Pareto-efficient solution. For Bator, "the modern formulation of the doctrine of external economies, in terms of direct interaction" is full of merits, but it "begs the fundamental question" concerning the cause of such externalities. The standard answer to this question in terms of nonappropriability looks quite unsatisfactory to Bator, because if nonappropriability means a simple "inability of a producer of a good or service physically to exclude users", it would be a very poor explanation since "“exclusion” is almost never impossible." Fences, scrambling devices and other gadgets can usually exclude successfully, but such exclusions fail lamentably when the final goal is to produce the Pareto-efficient solution that the market is supposed to. When one resorts to this type of solution, "there is no price which will efficiently mediate both supply and demand". Since the problems associated with externalities are not really solved by exclusion and appropriation, Bator decides to broaden the meaning of "externality" and to let this word "denote any situation where some Paretian costs and benefits remain *external to* decentralized cost-revenue calculations in terms of prices." Licensed by this broad definition, Bator and his followers did not hesitate to include as externalities not only "ownership externalities" (illustrated by Meade's unpaid apple-blossom, by "shared deposits" of fish, by water and even by "the training of nonslave labor to skills"), but also "technical externalities" (illustrated by cases of nonconvexities produced either by indivisibility or by "smooth increasing returns to scale" and even by any structural problems causing monopoly behaviour or misallocation of useful resources), and "public good externalities" (associated with most kinds of publicness, joint consumption, non-revelation of preferences, etc.). Bator's theory illustrates particularly well how, once neoclassical economists of the time had identified the market with a perfectly competitive structure subject to general equilibrium, the externalities, *as the residual left by such a*

market, became literally pervasive.

Even without such a comprehensive definition of an externality, one could be tempted to diagnose externalities everywhere the market system fails to arrive at an efficient solution that the adequate pricing of goods and services normally provides. Thus, Mishan proposed the following definition of externalities: "external effects may be said to arise when relevant effects on production or welfare go *wholly or partially* unpriced". For example, rather than being *excluded* from the consumption of bridge services, individuals would be *charged* for using them. But, what would be an "adequate" price for a service like that of a bridge which is provided in a situation of increasing return or even in a situation of practically zero marginal cost? Clearly such a service will be "partially unpriced". Thus according to Mishan's definition, externalities are also present each time a service, like the service provided by a bridge, is "positively priced" but not priced "adequately". For Mishan, as for Bator, externalities (namely the activities which, in some sense, go on outside the market) are doomed to be pervasive.

I have focused on Bator's and Mishan's approaches because they illustrate the extent to which the idea that externalities are everywhere in the economic system had taken hold by the fifties and sixties. Such views were very influential during these decades, even during the seventies; for example, Heller & Starrett in 1976 defended a thesis not too different from Bator's, when they concluded that an externality "can always be associated with the failure of some potential market to operate properly." In any case, such views illustrate how the concept of an externality tended to be perceived as what I have called a residual concept whose definition was directly dependent on the definition of the market. Once you have precisely characterized the meaning of that which is called a market, you have also determined what is left outside of such a structure, or more exactly, you have characterized the activities which the market does not control and each element of these residual activities will correspond to an externality.

But such a view supposes that something can be left outside a market, which sounded sensible for most neoclassical economists of this period because a market was seen by them as an highly artificial structure. From Walras to Samuelson, *neoclassical* economists had been busily constructing models of ideal markets. Actual markets, they

expected had to be made to conform to such models. When the real world refused to conform to these models, a neoclassical economist of the fifties or sixties typically concluded that he or she had to first determine what the situation would be like if a perfectly competitive market prevailed, and then look for a manageable way of attaining the closest approximation of it. Because perfect competition was an omnipresent norm for neoclassical economists, it was normal to diagnose externalities everywhere a gap existed between actual markets and this ideal model.

3 The neoliberal approach: "externalities" or transaction costs

Our question now is "how has this picture been transformed?" Since I claim that an externality is a residual entity, my answer is, unsurprisingly, that it is transformed when the representation of a market is itself transformed. And indeed, the representation of the market has been radically transformed with the development of neoliberalism during the last decades. If the idea of perfect competition was the paradigm of the market for neoclassical economists from Walras to Samuelson, the idea of "laissez faire" is the equivalent paradigm for neoliberal economists, whose influence was already decisive at the University of Chicago in the fifties. According to the neoliberals, a real market has very little to do with the highly artificial structure designed by the neoclassicals. They have little use for the model of the perfectly competitive market , made up of a large number of agents of equal standing and of an indefinite number of standardized goods, all capable of being fully appropriated and easily exchanged without entailing significant transaction costs. For them, the real world does *not* need to be reshaped in the manner of a Walrasian market. For them, actual markets, if not systematically impeded, *are* already capable of providing, not without certain costs of course, a relatively optimal solution to allocational problems. By contrast, the neoclassical market tended to be conceived as a highly artificial and idealized structure whose conditions of realization were so restrictive that in the actual world a large number of activities (designated as externalities) were going on outside its reach. These externalities were seen as an index of the gap existing between actual markets and this artificial structure. Not being obsessed by the model of a perfectly competitive market, neoliberals could hardly find any meaning in the notion of a "gap" between actual markets and an ideal market. Consequently, they could hardly acknowledge any real usefulness in the concept of an "externality". Since, in other words, activities could no longer be meaningfully characterized as going on outside the market, it was the notion of an

externality itself which tended to vanish alongside the development of the neoliberal conception of the market.

But, let us consider further this "neoliberal" image of the market. It is understood as any place where gains from trade are possible and consequently where negotiations are going on. The agents in such a market need not be of equal standing, like Walrasian agents, but are agents who can hold very different amounts of power and normally make use of the power they have. Moreover, the goods which are transacted do not need to be standardized goods, and if these "goods" are owned by the above agents, it is not necessarily in conjunction with well defined property rights. From an economic point of view, the crucial point is knowing who possesses the right to use the things which are considered as goods, and not the legal basis of the rights involved. For example, an industrialist operating on the shore of a river, may quite economically dispose of his garbage in the river as long as the law does not prohibit him from doing so. From a pragmatic point of view, and as far as *economic* relations are concerned, his right to use the river in this way is *not fundamentally different* from the right he has to use a commodity he has bought on the market. Similarly, if the law prohibits water pollution for the benefit of those who enjoy swimming in the river, the bathers' right to clean water is not significantly different from more conventional property rights. For economists, and especially for neoliberal economists, this means that in principle such "rights" can be bought or sold freely on the market. It is true that such atypical commodities are not perfectly exchangeable in the way Walrasian goods are, but various types of transactions and negotiations among those who possess these rights are possible, and, from this point of view, they are similar to the transactions and negotiations that go on between Walrasian traders.

Given that the very presence of any type of trade (or negotiation) resulting in potential gains is enough to characterize a neoliberal market, it is easy to see how there is very little room left for externalities. Actual markets — or, to be more explicit, actual forms of negotiations occurring where gain from trade is possible — fit the paradigmatic model of a market by hypothesis. However, this does not mean that neoliberals consider all the problems which prompted neoclassicals to identify externalities to be nonexistent. Nor does it mean that they consider all those activities, which, according to neoclassicals, were carried on outside a market (like the use of a river as a garbage disposal system by an

industrialist), as being instead smoothly carried out inside one. Rather, the point was that such activities were seen as a consequence of a particular market situation, namely a situation with prohibitive transaction costs. The main contribution of neoliberal economics to our understanding of the market is probably the consideration and analysis of transaction costs. Indeed, transactions as such are *far from being without costs*. Searching for information, bargaining and decision making, policing, enforcement and monitoring have prices, just as production and transportation have prices. Consequently, it is not always worthwhile to "buy" the largest possible amount of such things. The consideration of transaction costs does not directly dissolve the concept of an externality, but it suggests that one should characterize the market in such a fashion that the phenomena previously described as externalities appear to be nothing but a consequence of a specific calculation made on the market. If, for the neoclassicals, the scope of the market is limited by the presence of externalities, then for the neoliberals, it is the very efficiency of its actual working which is limited by the existence of significant transaction costs.

As is well known, the crucial step in the analysis of such costs was taken by Ronald Coase in his seminal 1960 paper on social costs. Coase's strategy was to underline in a dramatic fashion the role of social costs in a market by carefully analyzing what would happen in their hypothetical absence. And it is this careful analysis which resulted in the famous "Coase's theorem". The demonstration of this theorem is straightforward. Given the hypothesis of *zero* transaction costs and rational economic agents, it makes no difference, when it comes to the optimal allocation of resources, whether the rights favour the polluter or those who suffer from the pollution. The same result will prevail in both situations, since both parties will be ultimately led to a unique optimal agreement. For example, in the situation described above, suppose that the benefit from the easy disposal of garbage is greater than the benefit the bathers derive from clean water, but that, beyond a certain amount of pollution, the benefit lost by the bathers becomes larger than the extra benefit the polluter gains by polluting more extensively. If the law is against him, then the polluter will negotiate with the bathers and buy some "optimal" amount of pollution rights from them. By hypothesis, they will accept compensation up to the point where they would start to suffer more from pollution than they could benefit from the compensation the polluter is ready to offer them. If the law is against the bathers who suffer from the water pollution, then it would be in their own interest to bribe the polluter into reducing the amount of

pollution which he creates to the same "optimal" level as in the previous case and it would be in the interest of the polluter to accept such a bribe and reduce pollution to this optimal level. Naturally, such a conclusion is purely theoretical since, according to Coase himself, transaction costs *are* highly significant in such situations. Collecting payments from those who suffer from the pollution and preventing some of them from cheating by not revealing their true preferences would involve, if feasible at all, tremendous costs indeed. However, Coase's intention was not to suggest that the paralyzing effect of such costs could be easily overcome and a smooth market organized, but, on the contrary, to suggest that these costs must be accounted for in the normal calculations made on a market.

It is mainly the consequences of Coase's analysis on government policies oriented towards optimality and efficiency that have been extensively analyzed in the literature (produced during the sixties and seventies) which discussed externalities in light of Coase's theorem. For most of the authors of these papers, the main question was concerned with finding the appropriate solution to the problem diagnosed in this regard. For them, the essential question was to reevaluate, in this new context, Pigou's scheme of intervention based on taxes and subsidies. Rather than discussing this reevaluation, I would like to concentrate on the consequences of Coase's theorem on the very nature of externalities themselves. Referring no longer, in this context, to activities going on *outside the market,* the concept of externality indeed looked emptied of its very meaning.

4 A return to pecuniary externalities or the vanishing of a concept

In some neoliberal analyses, this last conclusion seems to be verified, in an unexpected way, by the vanishing of the distinction from which, as we have seen, the modern concept of an externality painfully emerged, namely the distinction between genuine technological externalities and the so-called pecuniary externalities. In a paper written in 1964, Harold Demsetz, who was a particularly active defender of Coase's theorem, did not hesitate to discount any difference between these two types of externalities. Like Coase, he consistently avoided the term “externality”, yet the phrase “side effects” is specifically chosen by him to replace “external effects” and he compares these side effects to what he calls “primary” effects, which are nothing but typical market interrelations or what, in another context, would have been called “pecuniary effects”. Demsetz claims that "there exist *no qualitative differences*" between these two types of

effects, the only differences being "those that are implicitly based on quantitative differences in exchange and police cost" or, if one prefers, in transaction costs. To illustrate his point, Demsetz uses the following example. "Suppose a factory invents a new more efficient furnace which can burn a cheaper grade of coal than can existing furnaces. The burning of cheap coal, we will assume, dirties homes in the neighborhood." No doubt this "side effect" corresponds to a typical technological externality, but for Demsetz the only important point is that it reduces "the wealth of nearby homeowners". However, Demsetz continues, "if this same factory, by virtue of its new furnace, successfully forces a nearby competing firm out of business, and if the resulting decline in demand for housing reduces the wealth of neighborhood homeowners, we do not become concerned". Indeed, this last situation corresponds to a usual market or pecuniary effect. Thus Demsetz raises the question: "Why the difference in our attitudes toward these two situations which have the same effect on homeowners?" In the case of demand for housing, Demsetz explains, we feel that "a smoothly operating market" will maximize wealth. If, in contrast, we cannot rely on an existing market in the smoke case, it is because "the cost of exchanging and policing smoke contracts" (the transaction costs) are too high "relative to the benefits of marketing smoke". However, while this circumstance excludes the presence of an actual market, it is fully compatible with the presence of a "potential market" which, according to Demsetz, "stands ready". But, how could any activity be outside the reach of such a potential market? If all the transaction costs are to be accounted by the market, either the smoke level and the values of the houses are actually controlled by the market according to the costs implied or the smoke level is left unreduced and the values of the houses decline accordingly because it is made clear by a *potential* market that controlling the smoke level this way would be prohibitive, given the costs involved including transactions costs. In the first case, there would be, by hypothesis, no externality, and in the second case, if one takes into account the potential role of the potential market, there would be none either.

It was this last conclusion that was to be made explicit and pushed to its extreme limit in a paper published in 1979 by Carl Dahlman. Once transaction costs have been placed on the same footing as the usual production and transportation costs, it seems normal to raise the same question which is raised concerning these familiar costs. Why incur these costs if they are themselves larger than the benefits to be derived from an eventual transaction? After all, you might dream of owning a Ferrari, but if you consider

that the (production) costs involved are higher than the benefits expected from owning such a car, you could decide not to realize this dream without concluding that this absence of transaction corresponds to a non Pareto-optimal situation. Dahlman's central idea was to apply such a consideration to transaction costs. According to him, when assessing an optimal situation, it is a mistake to employ a Walrasian model without transaction costs. After all, an ideal world without transaction costs is just as unattainable as an ideal world without production costs. This conclusion seems to make sense, but an odd consequence of it is that, once all transactions costs have been taken into account, *almost any static situation will look optimal*. If no transaction is going on to improve a situation, it is tempting to conclude that it is because the *costs* of an eventual transaction (for example, the cost of organizing and monitoring would-be transactors) added to the payment involved in those eventual transactions make it unprofitable. If, for example, our industrialist persists in polluting the river even when the nuisance to bathers is greater than the benefit to the industry of using this polluting technique, it is, in one sense, because the "transaction" costs (the cost of organizing the bathers, of forcing them to reveal their true preferences and of collecting the amount required to convince the industrialist to reduce his operations, etc.) would be so great that, added to the amount of the bribe itself, it *would* exceed the potential benefit to the bathers.

In such conditions, the concept of an "externality" becomes clearly meaningless. An all inclusive concept of the market would be capable of absorbing all forms of human interaction, it is easy to see why. Any potential externality could or could not be eliminated by some type of negotiations involving costs. In the first case, *by hypothesis*, there would no longer be the externality; in the second case, the failure to eliminate the putative externality would be due to *excessive economic (transaction) costs on the potential market,* and thus, strictly speaking, there would be no externality in this case either. Thus, according to such a neoliberal notion of an all inclusive market, there would be no more reason to identify an externality in this pollution case than in the fact that, because of its high production cost, you refrain from buying the Ferrari you might dream of owning.

Along such lines of argument, one could arrive at the conclusion that any situation whatsoever is optimal since any improvement would be implemented were its costs, including transaction costs, low enough to make it socially profitable. It was just such a

conclusion that Mishan anticipated with apprehension when he wrote in 1971 a rather ironic paper entitled "Pangloss of Pollution". The reference to Dr. Pangloss, the pleasant champion of "the best of all possible worlds" in Voltaire's *Candide,* was to suggest how the inclusion of transaction costs can dramatically change the analysis of pollution and transform into an optimal situation what was considered as one of the most serious challenges to economists' confidence in the virtues of the market. It might even be possible to push the matter further and suggest that such an argument could optimalize any situation whatsoever. Any dictatorial government, even of a type particularly inimical to liberalism, could be justified by an extension of this neoliberal argument. Dictatorial governments activities interfere significantly with the consumption functions of its citizens by restricting their individual liberty. However, if the inconvenience suffered by these citizens was really that important, they could bribe the government to reduce its liberty-limiting activities to an optimal amount. If they do not attempt to bribe the government, it is clearly because such transactions would involve costs (information costs, organization costs, decision making costs and monitoring costs) which would be much higher than the benefits expected. On this ground, it would make sense, according to an extreme — although somewhat inverted — neoliberal point of view, to characterize the situation in this dictatorial country as optimal as it is! Naturally, one might object to such an application of the neoliberal theory of the market to a political (as opposed to an economic) situation. However, the *actual* relation between an industrialist and the neighboring bathers is not a typically economic relation, and consequently, it is not clear that alleged economic and political situations are really as different as first thought. As is well known, a number of prisoners successfully manage to bribe their jailers. And, after all, the application of economic analysis to political situations is, as is also well known, one of the major contributions of neoliberalism. In any case, the goal of this comparison was not to suggest that political and economic situations are equivalent, but to dramatically illustrate that, if pushed to the limit, there is an unexpected consequence to this conceptual change associated with the neoliberal approach: not only the concept of an externality but also its positive counterpart, the concept of a market, might loose their very meanings.

It would be unfair, however, to conclude that Coase, or even Dahlman, are inclined to push their arguments to such a limit. On the contrary, both insist that their views do not prevent appropriate government interventions insofar as the costs of such interventions

would be themselves lower than the gains obtained by such interventions and lower than the costs (including transaction costs) involved in reaching a comparable result through the market. In other words, they would recommend government intervention if the costs involved were lower than the costs it saved. In any case, concerning the present argument, the point is not that such a neoliberal approach would exclude any type of intervention, but that the scope of such interventions is reduced by the fact that no activities can properly be considered as going on *outside* the market and that consequently no intervention can be justified simply on this ground, without being first submitted to a scarcely feasible measurement of the transaction costs saved by it. The point is that, in such a context, it is apparently no longer meaningful to refer to externalities at all.

5 Surviving as a (useful ?) concept

But if such is the case, how has this concept found its way into so many papers written from a Coasian perspective during the sixties and seventies? How was it possible that this concept had been treated as a useful tool in these papers? To answer this question, it might be helpful to consider another influential paper by James Buchanan and Craig Stubblebine written two years after the publication of Coase's own paper. While their analysis is akin to Coase's, Buchanan and Stubblebine extensively discuss the concept of externality and even entitle their paper with a single word "Externality". The authors gave a definition of an externality which, at first glance, looks quite traditional: "We define an external effect, *an externality,* to be present when, $u^A = u^A\ (X_1, X_2, \ldots, X_m, Y_1)$. This states that the utility of an individual, A, is dependent upon the "activities", $(X_1, X_2, \ldots, X_m,)$, that are exclusively under his own control or authority, but also upon another single activity, Y_1, which is, by definition, under the control of a second individual, B, who is presumed to be a member of the same social group." This definition looks similar to those of Scitovsky and Mishan, which are also based on the idea of interdependence between activities, but is in fact quite different. Buchanan and Stubblebine no longer mention any distinction between "paid" and "unpaid" or between "priced" and "unpriced" activities. In other words, there is no longer a semicolon in the utility function because there is no longer any distinction between what is inside (paid or priced) and what is outside (unpaid or unpriced) the market. The dropping of the semicolon is not without consequences. Given that my utility is clearly dependent upon the activities my baker performs which are under his control but not under mine, how can one claim that no externalities are involved in our

commercial relations without at least implicitly emphasizing that I can buy his bread or control his activities to some extent by paying for them, that is, by implicitly contrasting paid activities with the unpaid ones which involve externalities? Clearly, when we remove the semicolon from the definition, it becomes much more difficult to figure out just when an "absence of control" actually becomes a case of being "external" to a state of things which presumably would be characterized by "internal" relations.

In any case, Buchanan and Stubblebine introduced a few new distinctions between various types of externalities and concluded that only what they call "Pareto-relevant externalities" correspond to the term "externalities" as it is commonly employed by economists. However, this last remark sounds rather paradoxical if we consider that "Pareto-relevant externalities" are precisely those which are characterized by the opportunity for "gains from trade". Since the opportunity for "gains from trade" is the typical trait of a neoliberal market, it is implied that the word “externalities”, as usually used by economists designates what is characterized by the normal working of the market as opposed to designating what is *outside* the market. This illustrates just how far the meaning of the word “externality” was transformed, and even inverted, when used in the context of a neoliberal view of the market. The paradox, however, is partially dissipated when we consider that Buchanan and Stubblebine maintain that, once a Pareto equilibrium is reached, "Pareto-relevant externalities" vanish. Thus, externalities are present when such an equilibrium cannot be reached, mainly when transaction costs are too high and especially when "costs of organising group decisions [...] will prevent realization of some “gains from trade”". In a neoliberal view of the market, situations like those involving our group of bathers, who can hardly organize themselves to exploit the "gains from trade" which were open to them, can still be characterized as externalities, but these "externalities" must be defined in such a fashion that they be clearly located *inside* an ubiquitous market. Buchanan and Stubblebine, as well as Coase, place emphasis on the theoretical capacity of the market to internalize any situation of the type previously characterized as an externality. They do this in two stages: (1) such situations are presented as elements of a *potential* market, and (2) potential markets are implicitly treated as extensions or nearly integral parts of *the* market.

But is the word "externality" an appropriate word to characterize a situation which is

almost as internal to the market as situations giving rise to transactions, differing from them only in that potential transactors conclude that these transactions are not worthwhile? Naturally, material situations involved (bathers facing industrialists, farmers facing ranchers or facing smoke emission from trains) are of the same type, and one can understand why economists tend to use the same word to refer to similar material situations. But the word "externality" refers explicitly to an economic trait (that of being external to something) which is no longer meaningful in this new context. Without doubt this partially explains why Coase himself never used the term “externality" to expound his thesis and almost always framed it with inverted commas when he reviewed the whole question in a later book. To clarify his discussion of the question, Coase synthesizes the usual definition in terms which, like those used by Buchanan and Stubblebine, refer only to interindividual interaction: "An externality is more usually defined as the effect of one person's decision on someone who is not a party to that decision." This sober definition does not refer to "direct" or "unpriced" activities, but it distinguishes between situations in which the person affected by a decision is "party to that decision" and situations in which that person is not "party to that decision". This minimal evocation (being not party to a decision) of what makes the externalities "external" to the standard working of a market is already too much externalization for Coase and prompts him to conclude negatively that such a statement is "representative of the mainstream economic analysis."

It is true that most economists sympathetic to the neoliberal approach have been less reluctant than Coase to use a term so little congenial to their views. Consequently, the term "externality" has been used extensively after Coase's seminal paper. In any case, the recent literature, which tends to bear as much on externality as on transaction costs, has been devoted to either refining or discussing Coase's approach, applying the resources of game-theory to the whole problem, discussing Pigou's tax-subsidy schemes in the context of transaction costs or underscoring the limits of the market solution in the context of pollution or various forms of free-riding, etc. However, very little in this relatively recent literature has been devoted to the concept of an externality as such. Consequently, the ambiguity raised by the concept of an externality which is in fact no longer "external" to anything has not been dissipated.

It seems reasonable to conclude that far from being clarified during its tumultuous

history, the meaning of this concept has become increasingly ambiguous. After being perceived more and more as a residual concept associated with the concept of an artificially designed market, the concept of externality was reduced dramatically as, with the development of neoliberalism, the concept of market expanded to fill the whole place. Having, in the mean time, been associated with the notion of interdependence, it continued to refer to any form of this type of phenomenon. No doubt in order to accommodate the neoliberal conception of the market, the concept of an externality had to be defined vaguely enough to avoid any implicit reference to an outside of the market, which would have restored it to its original meaning and would have, by this very fact, denied the ubiquitous character of the neoliberal market. Alternatively, when this concept has been defined in a more meaningful fashion, it was the very existence of the phenomenon to which it refers that was to be denied in a neoliberal perspective, in such a way that, specifically understood, this phenomenon was treated as a remnant of the old-fashion neoclassical approach that still prevails among those who refer to a highly abstract but perfectly "civilized" conception of the market.

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Economists do not seem to be bothered by these ambiguities. When it comes to the policy problems which are most important to them, the proper definition of a residual concept could hardly be determinant, precisely because it is residual. When it comes to deciding whether taxing the polluters, prohibiting pollution or abstaining from any intervention will result in the maximal social product, it seems that economists can arrive at their conclusions without the help of any common satisfactory definition of externalities. Whether we characterize pollution as a market failure or as a situation resulting from excessive transactions costs, it does not seem to affect such results very much indeed. Those referring to market failures would say that transactions do not take place between polluters and pollutees because their relations are external to the (actual) market which breaks down at a given point. Those referring to transaction costs would *also* say that actual transactions do not take place between polluters and pollutees because, while nothing is external to the market, the transaction costs computed on a potential market prohibit these transactions from taking place. Insofar as the only issue at stake — and a large part of the post Coasian literature on externalities is concerned with similar issues — is an investigation of how a tax on polluters and a banishment of pollution would

respectively affect the GNP, it is not clear that differences in the way one defines a market (should the market include potential markets or not? should it leave room for externalities or not?...) matters very much. With both types of definition of the market and externalities, it is possible in principle to assess the respective effects of the tax and the banishment insofar as it is possible to assess the costs and benefits tentatively associated with each of them. Between both perspectives, the only difference which matters in such computations concern *what should count as a cost* to be deducted from the benefits, but the answer to such a question does not seem, at first glance, to be *directly* related to the definition of an externality. Saying that a cost should be counted in a cost-benefit analysis is not the same thing as saying that a cost is accounted for by a market. Even if an economist is not inclined to refer to potential markets which are made inoperative by excessive transactions costs, that does not imply that he or she is not sensible to the fact that a prohibition of pollution implies tremendous monitoring costs. But, if such is the situation, why bother with defining a term like "externality" that we can dispense with without serious trouble? Do we not learn from the long debate on externalities that definitions and methodological considerations do not matter when economic results are involved? I am sure that many economists, including many eminent participants in the debate on externalities, would be inclined to conclude along these lines.

However, from a different point of view, the very fact that economic issues might be independent of the clarification of conceptual issues raises, in itself, a serious question about the meaning of these results of economic analysis. One cannot but be perplexed in considering the fact that the formidable problems that were associated with externalities like pollution, free riding, publicness, etc. have more or less dissolved as economists turned progressively from a Samuelsonian neoclassical approach to a Coasian neoliberal one, from a pure competition to a *laissez faire* conception of the market. That this formidable challenge to the market was magically dissolved by a wave of the wand which has awaked a multitude of potential markets kept asleep by transaction costs, is in itself an index of a more fundamental issue. Far from implying that such issues are also indifferent to the debate concerning the definition of the market and of externalities, the fact that more typical issues raised by economists are relatively indifferent to this debate raises questions about the very meaning of economists' results.

In fact, what has been saved by the Coasian approach is the *image* of optimality associated with the market. Since Adam Smith's Invisible Hand, the idea of optimality has been more or less closely associated with the notion of the market, even if this idea was formally defined much later. In this context, the concept of an externality was characterized, as we have seen, as the residual of the market. If the market produces optimal results, sub-optimal results could be expected outside of its realm. Thus, the distinction between pecuniary and technical externality was received as the definitive annexation by the *actual* market of those situations which were associated with pecuniary externalities: in contrast with those associated with genuine externalities such situations became sheer manifestations of the normal working of the market. But with Demsetz and Dahlman, the market no longer has an outside, since *potential* markets fill the whole space not occupied by actual markets; consequently, the distinction between pecuniary and technological externalities ceased to be a significant one. In such a context, it is the very concept of optimality which starts to be voided of meaning, because no situation whatsoever can fail to be optimal. Actually, the link between market and optimality is ultimately based on the idea that people are not stupid enough to miss taking advantage of an opportunity of gain from trade provided by the market. But suppose that a significant opportunity exists somewhere which is known to all parties but which is not being exploited. Clearly this is because no actual market is organized enough to permit the required trade. It does not help to claim that a potential market exists in principle, because the problem is precisely that it is only in principle that such a potential market exists, which is to say that it has little chance to become an actual market. Markets are nothing but structures which facilitate and make possible trade. Consequently, a market is an actual market (though perhaps not a currently functioning one) or it is not a market at all. If it is practically impossible to create, forget it and acknowledge that we are outside the market! No doubt, the bathers could make an advantageous deal with the polluter, but the problem is that no actual market exists for such a deal to be made. Looking at potential markets and at transaction costs does not help because the transaction costs of creating the potential market are so extreme and so "unmarketlike" that it sounds reasonable to conclude that acknowledging this fact amounts to saying that no market exists or that markets fail to solve this problem.

Given that the *practical* difference looks so slight between the idea of prohibitive

transaction costs and the idea of market failure, it is hardly surprising that conceptual and methodological issues about the definition of externalities seem to be of little importance when it comes to solving an economic problem such as measuring the impact of various policies on national product, but the importance of these methodological issues might reappear after all when it comes to deciding what should count as a cost and consequently what is ultimately the optimal solution. Indeed, the Coasian approach correctly suggests computing all the costs involved in a decision, but it does not say how to draw a demarcation line between various enterprises like organizing a multitude of bathers in such a way that (after revealing their true preferences) they act as a single agent to bribe an industrialist, organizing an oppressed people to bribe a dictatorial government and induce it to become more liberal, changing the mentality of a whole people on such or such a point, etc. It is true that all these potential activities have tremendous costs, but it is far from clear that this very fact is sufficient for them to be qualified as *market* activities. Above all, it is far from clear that an attempt to force them into the framework of the market will authorize us to apply to such a market the theorems concerning optimality which can be derived from the postulates associated with a typical neoclassical market. If I have attempted to discover the rationale behind the vagaries in the evolution of this concept, it is because I think that it might help in clarifying the meaning of economists' conclusions which are at least implicitly related to optimality and, it is because I suspect that, from this point of view, much can be learned from an analysis of the long and inconclusive debate on externalities.

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