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## SOCIAL EXTERNALITIES AND ECONOMIC ANALYSIS

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### Abstract

This paper considers and assesses the concept of social externalities through human interdependence, in relation to the economic analysis of externalities in the tradition of Pigou and Arrow, including the analysis of the commons. It argues that there are limits to economic analysis. Our proposal is to enlarge the perspective and start thinking about a broader framework in which any pattern of influence of an agent or a group of agents over a third party, which is not mediated by any economic, social, or psychological mechanism guaranteeing the alignment of the marginal net private benefit with marginal net social benefit, can be attached the "externality" label and be scrutinized for the likely negative consequences that result from the divergence. These consequences may be significant given the many interactions between the social and economic realms, and the scope for spillovers and feedback loops to emerge. The paper also establishes a tentative and probably incomplete list of possible internalizing mechanisms for externalities under this broader framework, which includes: pricing and monetary incentives; altruism and solidarity; moral norms; reciprocity and mutual monitoring; centralized cooperative decision-making; and merger. There are clear reasons why the pricing mechanism is not appropriate in some cases. A more difficult question to answer is what factors determine which of the mechanisms is the appropriate one to rely on in a given sphere of relations and activities. The object of the paper is to encourage research and contributions from all the relevant disciplines of social sciences on the pervasive human interdependence that the notion of social externalities tries to capture.

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# Social Externalities and Economic Analysis

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This version: August 6, 2020<sup>1</sup>

## Abstract

This paper considers and assesses the concept of social externalities through human interdependence, in relation to the economic analysis of externalities in the tradition of Pigou and Arrow, including the analysis of the commons. It argues that there are limits to economic analysis. Our proposal is to enlarge the perspective and start thinking about a broader framework in which any pattern of influence of an agent or a group of agents over a third party, which is not mediated by any economic, social, or psychological mechanism guaranteeing the alignment of the marginal net private benefit with marginal net social benefit, can be attached the “externality” label and be scrutinized for the likely negative consequences that result from the divergence. These consequences may be significant given the many interactions between the social and economic realms, and the scope for spillovers and feedback loops to emerge. The paper also establishes a tentative and probably incomplete list of possible internalizing mechanisms for externalities under this broader framework, which includes: pricing and monetary incentives; altruism and solidarity; moral norms; reciprocity and mutual monitoring; centralized cooperative decision-making; and merger. There are clear reasons why the pricing mechanism is not appropriate in some cases. A more difficult question to answer is what factors determine which of the mechanisms is the appropriate one to rely on in a given sphere of relations and activities. The object of the paper is to encourage research and contributions from all the relevant disciplines of social sciences on the pervasive human interdependence that the notion of social externalities tries to capture.

## Keywords

Externalities, Commons, Human Interdependence, Social Externalities, Internalizing Mechanisms, Ethical Principles

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## Externalities, Pigou and Arrow

The central role of externalities in economic analysis, from ECON 101 to the frontiers of research and policy analysis, gives the lie to the familiar trope that economists rarely deviate from their center of gravity of a Smithian free market where an invisible hand leads to a social optimum. In economic analysis an externality occurs when, because of an individual's actions, "incidental services are performed to third parties from whom it is technically difficult to exact payment", or correspondingly there is "technical difficulty of enforcing compensation for incidental disservices." These quotations are not recent. They are from exactly a century ago, penned by the father of modern Welfare Economics, Arthur Pigou (1920).

The examples of externalities Pigou gave in his magnum opus include the well-known one of the factory and the laundry, and some of them may appear dated, but others have a surprisingly modern aspect to them:

"....as Sidgwick observes, "it may easily happen that the benefits of a well-placed light-house must be largely enjoyed by ships on which no toll could be conveniently levied." It is true, in like manner, of resources devoted to afforestation, since the beneficial effect on climate often extends beyond the borders of the estates owned by the person responsible for the forest... It is true of resources devoted to the prevention of smoke from factory chimneys... Lastly and most important of all, it is true of resources devoted alike to the fundamental problems of scientific research, out of which, in unexpected ways, discoveries of high practical utility often grow... [I]ncidental uncharged disservices are rendered to third parties when the game-preserving activities of one occupier involve the overrunning of a neighbouring occupier's land by rabbits... The case is similar....with resources devoted to the production and sale of intoxicants. ...[T]he investment should, as Mr. Bernard Shaw observes, be debited with the extra costs in policemen and prisons which it indirectly makes necessary... [W]hen... a loan to a foreign government and makes it possible for that government to engage in a war which otherwise would not have taken place, the indirect loss which Englishmen in general suffer, in consequence of the world impoverishment caused by the war, should be debited against the interest which English financiers receive... Perhaps, however, the crowning illustration of this order of excess of private over social net product is afforded by the work done by women in factories, particularly during the periods immediately preceding and succeeding confinement; for there can be no doubt that this work often carries with it, besides the earnings of the women themselves, grave injury to the health of their children..."

Externalities are of course central to the issue of the Commons, famously introduced by William Forster Lloyd in his two lectures on population, delivered in 1832 and published in 1833 (reprinted as Lloyd, 1980). More than a hundred years before Pigou, Lloyd enunciated the incidental disservices that can happen in unregulated commons:

“....suppose two persons to have a common purse, to which each may freely resort. The ordinary source of motives for economy is a foresight of the diminution in the means of future enjoyment depending on each act of present expenditure. If a man takes a guinea out of his own purse, the remainder, which he can spend after wards, is diminished by a guinea. But not so, if he takes it from a fund, to which he and another have an equal right of access. The loss falling upon both, he spends a guinea with as little consideration as he would use in spending half a guinea, were the fund divided. Each determines his expenditure as if the whole of the joint stock were his own. Consequently, in a multitude of partners, where the diminution affected by each separate act of expenditure is insensible, the motive for economy entirely vanishes.” (Lloyd, 1980, p. 479)

Lloyd’s reasoning on what we would now call negative externalities was of course brought to the modern discourse by Garrett Hardin (1968) in his iconic “Tragedy of the Commons”, and then elaborated upon by Elinor Ostrom (1990) in her Nobel prize winning contributions. Lloyd’s reasoning also applies in reverse where individuals are making a contribution to the “common purse”, the case of positive externalities when there are “incidental services” as Pigou would say.

The connections between the disquisitions of Lloyd and Pigou, albeit separated by a century, are quite remarkable. The situations described have the generic feature that private incentives based on market prices do not lead to what might be construed as the social good, as summarized by Pigou (in his own “national dividend” terminology rather than the more recent “social good” or “social welfare”):

“In general industrialists are interested, not in the social, but only in the private, net product of their operations. [S]elf-interest will... not tend to bring about equality in the values of the marginal social net products except when marginal private net product and marginal social net product are identical. When there is a divergence between these two sorts of marginal net products, self-interest will not, therefore, tend to make the national dividend a maximum; and, consequently, certain specific acts of interference with normal economic processes may be expected, not to diminish, but to increase the dividend.”

What are these “specific acts of interference with normal economic processes”? The key to an externality in economic analysis is the “technical difficulty” of “exacting payment” or “enforcing compensation” for positive or negative spillover effects. If there was no such difficulty in the normal run of things then presumably market forces, the invisible hand, would incentivize these payments to be exacted or these compensations to be enforced. But they do not because they cannot. If an outside agency could correct for this by charging for “incidental disservices” and paying for “incidental services”, then the issue would be resolved. That outside agency is the state, and the payments and compensations are what we now call “Pigouvian taxes” or “Pigouvian subsidies.” A carbon tax, much discussed in the context of greenhouse gas emissions and climate change, is such a Pigouvian tax. The calculation of such a tax is also set out, at least in principle, by Pigouvian arguments—the tax (or subsidy) should go to the point “where marginal private net product and marginal social net product are identical.”

There are of course many variations on these Pigouvian themes in economic analysis. One alternative to the use of price instruments such as taxes and subsidies is to simply regulate activity in quantitative terms, if this were technically feasible. Indeed, this is also done in practice. Use of both quantity and price instruments is also possible, and is present for example in the classic analysis of Weitzman (1974) and in actual policies of “cap and trade” in pollution permits. There is also extensive economic analysis which flows from the claim that the reason why the allocation of costs and benefits of some activities in the market place is difficult is because property rights are not adequately defined. If this was to be done, it is argued, then exacting payment and enforcing compensation could proceed as it would for normal production activities and the consequences of incidental services and disservices would not emerge because they would have been priced appropriately through the interaction of the two sides of these services and disservices. This is the famed Coasian bargain, named after the Nobel prize winner Ronald Coase (1960)—his thesis launched a vigorous and ongoing debate on the conditions under which its conclusions would be valid.

Despite these variations on the theme, at the heart of an economic analysis of externalities, the central theme is the pricing perspective. An output or an action is underpriced or overpriced relative to social valuation, leading to overproduction or underproduction relative to the social optimum. The remedy is thus to correct the pricing, through (explicit or implicit) taxes or subsidies, thereby leading to a correction in the over or underproduction of the good or action in question. Even when the policy intervention is that of setting a quantity, this can be shown to be equivalent to setting a “shadow price.” This pricing perspective on externalities was developed by Arrow (1969),

a future Nobel prize winner, in a paper written for the Joint Economic Commission of the 91<sup>st</sup> Congress of the United States of America, in which the framework of Arrow-Debreu General Equilibrium Theory and Welfare Economics, the formalization of Adam Smith's Invisible Hand, was extended to cover externalities. Arrow's paper is of its time. A modern account of this thinking is provided more recently by another Nobel prize winner, Eric Maskin (2019, pp 15-16):

"Arrow (1969) imagines expanding the set of markets so that agents can buy and sell external effects. Thus, in the smoke example, the steel producer will sell smoke reduction, and each of the affected parties will buy smoke reduction. In this exchange, the producer will receive the sum of the parties' payments. Of course, in equilibrium, the amount of smoke reduction must be the same for everyone. Thus, since different parties may not all value smoke reduction equally, they may have to pay different amounts for it (in effect, they face personalized prices). If markets are created for all external effects, then... competitive equilibrium is once again Pareto optimal."

Furthermore, Arrow's formulation "illustrates the Coasean idea (Coase 1960) that externality problems can often be solved if the parties concerned get together and reach a bargain (Arrow's personalized prices can be interpreted as the terms of trade reached in the bargain)."

Arrow's conceptualization generalizes and formalizes Pigou's intuition on the divergence between the private good advanced through actions in the market following price signals, and the social good when these actions have repercussion not fully captured in the market. The actual applications of this conceptualization, for example to generating quantitative estimates of a carbon tax, require many more steps of a specific and empirical nature, but their theoretical roots lie in Pigou and in Arrow.

## Externalities and the Limits of Economic Analysis

Thus according to Pigou and Arrow, economic externalities arise when economic actions responding to price incentives in markets have spillover effects not mediated by markets—or, more generally, by mechanisms "exacting payment" or "enforcing compensation." Since then, externalities have occupied a prominent place in the list of market failures, alongside market power and informational asymmetries. But, by attaching externalities to an issue of missing market mediation, economists may have unduly narrowed the scope of analysis of the social inefficiency induced by similar phenomena.

As a matter of fact, Pigou himself mentioned “incidental services” and “disservices” in the context of a quite general examination of the situations in which the marginal private net product may diverge from the marginal social net product. His list, at first glance, does not differ much from the modern list of market failures. The first category he examines is the moral hazard problem due to the lack of incentives affecting tenants as regards the maintenance of their rented property. He also mentions investment in deception about products, foreshadowing future analyses of adverse selection. A prominent topic in his analysis is “competitive advertisement directed to the sole purpose of transferring the demand for a given commodity from one source of supply to another.” Also wasteful are the resources spent on what is now called “rent seeking” and is named “bargaining” by Pigou: “it is plain that activities and resources devoted to manipulating the ratio of exchange [in a bilateral monopoly] may yield a positive private net product; but they cannot... yield a positive social net product.”

But he also develops the argument that the structure of the economy may affect the opportunities for training by workers and yield social returns which are not accounted for in private decisions. Specifically, he claims that in an economy with many small firms, there are wide opportunities for talented workers to reach managerial positions, whereas when very large firms dominate, managerial positions are scarcer and less open to rank-and-file emerging talents. This example is inspiring because it points to wide consequences for human and social development and to an underlying phenomenon that is more structural than a simple “market failure”.

Our proposal, here, is to further enlarge the perspective and start thinking about a broader framework in which *any pattern of influence of an agent or a group of agents over a third party, which is not mediated by any economic, social, or psychological mechanism guaranteeing the alignment of the marginal net private benefit with marginal net social benefit*, can be attached the “externality” label and be scrutinized for the likely negative consequences that result from the divergence.

This broadening of the perspective recognizes that the source of the externality may or may not belong to the sphere of “economic” activities—delineating this sphere is at any rate a rather contentious issue. For example, the love, care and attention that are given within a family deeply affect the human development of each member of the family. One way to see this, as documented by Newton (2002), is in the lasting impairments experienced by individuals who suffer severe neglect or isolation as children. More generally, a great deal of research has documented that parenting behaviors and the parent-child relationship can have pervasive impacts on child development

(Sanders and Turner 2018). Siblings, too, have been shown to play a large role in shaping development through childhood and adolescence (McHale, Updegraff and Whiteman 2012). These behaviors and relationships are entirely unregulated by traditional mechanisms, except for the broad restrictions provided by laws against abuse and neglect, even though there are myriad ways in which these family relations could stray from what is optimal for a child and the family as a whole.

Educational settings are another sphere in which children's lives are heavily shaped, with long term effects on both their development and academic outcomes. School systems seek to optimize this environment through curriculum design, testing and exams, teacher recruitment and training, and many other mechanisms. Yet these formal approaches may not always be well suited to optimizing the relationships formed between teachers and students, which have been highlighted by scholars such as Pianta (1999) as a crucial factor in student outcomes.

The workplace may be a more traditionally 'economic' sphere, but even here, there are many potential external effects that might arise. For example, if managers can build trust with and among their employees by allowing employees to participate in management decision making, those employees often become more committed and productive (Dow 2019). Conversely, sowing discord in an office or workplace may generate a substantial disservice both in the form of direct effects on mental health and job satisfaction, and in flow on effects to team effectiveness and productivity. Researchers have established the concepts of 'leader-member exchange' (Graen and Uhl-Bien 1995) and 'team-member exchange' (Seers 1989) to define and measure the quality of these workplace relationships, consistently finding strong effects.

In fact, any number of interactions, activities, and relationships occurring in a community may be a source of services and disservices. Investing time in bringing a community together at times of stress, or providing a platform for community interaction in one's home may have profound impact on the people involved. Volunteering in a shelter for the homeless has direct consequences for the wellbeing of the care receiver, and of the caregiver. In work on social disorganization theory developed by sociologists such as Sampson and Wilson (1995), the breakdown of social networks at the neighborhood level is proposed as a key factor driving differences in local crime rates. Similarly, Putnam (2000) argues that engagement in community organizations plays a vital role in the functioning of democracy. There is also extensive evidence of public health benefits from community interactions and the maintenance of social networks and while the precise mechanisms for these health effects remain uncertain, Berkman et al. (2000)

propose a model in which the social and cultural context shapes social networks, which in turn provide support, influence, engagement, and material resources that bolster health outcomes. Even online social networks can have significant effects on wellbeing, by providing support and companionship to those who are isolated, by damaging mental health and wellbeing through bullying and abuse, or by inflaming distrust and division through misinformation.

This broader perspective on externalities immediately leads to the question of what set of mechanisms can operate to align social and private interests across such a vast array of interactions and relationships. Economists, after Pigou, Arrow and Coase, have focused on pricing instruments such as taxes and subsidies, or cap-and-trade, that seek to mimic the market by sending monetary signals for the agents' economic calculus.

Viewed from this general standpoint, one can more precisely identify the key limitations of the economists' approach. Recall that the sub-title of Arrow's submission to the Joint Economic Commission of the 91st Congress was "issues pertinent to the choice of market versus non market allocation." Thus "non-market" is already present in the thought process. However, the direction and thrust of his thinking was in effect to "marketize" non-market interactions through the system of "personalized prices" (these are also sometimes referred to in the literature as "Arrow prices"). Once this is done the powerful machinery of Arrow-Debreu general equilibrium, the formalization of Smith's invisible hand, can be brought to bear on conceptualization. These personalized prices, if they can be calculated and implemented, in effect internalize the externality by "exacting payment" and "enforcing compensation" to take full account of the consequences of individual action for the general good when the market does not do so.

As Maskin (2019, p. 16) notes: .... Arrow's expanded economy is conceptually illuminating, but he did not intend it as a practical solution to externalities. Indeed, there are... considerable obstacles to instituting such a scheme in reality." Among the difficulties of setting "personalized prices" or "Arrow prices" is that "if each affected party has its own personalized price (so that there is just one trader on each side of the market), then the standard assumption that consumers and firms take prices as given strains credulity" (Maskin, 2019, p. 16). There are further more nuanced difficulties in incorporating personalized prices into a general equilibrium schema, which for the case of smoke pollution can be illustrated as follows: "...each affected party buys the entire smoke reduction on its own—in effect, it expects that exactly the reduction it buys will be implemented. However, other parties are doing the same thing, so even if a given party stays out of this market itself, there will still be smoke reduction, contrary to its expectation." (Maskin, 2019, p.16).

But there is a deeper, more fundamental reason why the personalized prices approach fails in certain social contexts. Charging a price for a social interaction irretrievably and irrevocably changes the nature of that interaction. The issue has been labeled variously as “obnoxious markets” (Kanbur, 2004), “noxious markets” (Satz, 2010) or “repugnant markets” (Roth, 2007). As Kanbur (2004, p. 40) notes:

“Markets and exchange evoke strangely contradictory emotions. Common language is full of allusions to trading metaphors, ranging from the positive—'fair exchange is no robbery'—to the neutrally factual—'every man has his price'—to the negative—'he would sell his own grandmother if the price were right'. These common expressions capture several instinctive but potentially conflicting reactions—that it is quite natural for things to have a price, that what matters is that this price is 'fair', and that some exchanges are just not right, no matter what the price.”

The title of Satz’s (2010) book, *Why Some Things Should Not Be For Sale*, captures the heart of her analytical agenda, and Roth (2007, p. 38) points to the economic implications of a “distaste for certain kinds of transactions” for market design:

“When my colleagues and I have helped design markets and allocation procedures, we have often found that distaste for certain kinds of transactions can be a real constraint on markets and how they are designed, every bit as real as the constraints imposed by technology or by the requirements of incentives and efficiency.”

The key point which follows from the recognition of degrees of incompatibility between pricing and certain kinds of non-market, social, transactions, is that the applicability of the personalized prices perspective of Arrow, or even the less demanding perspective of Pigouvian taxation or subsidy, quite simply collapses. And it collapses not just because of the technical difficulty of implementing personalized prices, in principle for every pair of social interactions, but the fundamental incoherence of the very idea of a price for certain types of transactions. Of course this holds true only for some not all social transactions. As Zelizer (2007) vividly documents, the simple dichotomy between the monetary transactions sphere and the non-monetary sphere is not generally valid—context matters.

## Alternative mechanisms for regulating social externalities

So while the context matters, a pricing response is likely to be ill-suited to addressing many of the potential externalities that might arise in the course of social interactions and relations.

There are practical barriers to instituting personalized prices, and there are some activities where a pricing mechanism would be distasteful. It is therefore clear that other mechanisms must play an essential role in helping agents internalize the impact of their decisions on others in many cases.

One such mechanism may be biological processes and instincts that have evolved to reward certain types of pro-social behavior. Parental love triggers a degree of altruism which protects the interests of dependent children, and this altruistic instinct can extend to other family members, friends, and even strangers. More generally, feelings of solidarity and community may provide a psychological internalizing mechanism that is quite powerful, especially at certain local scales.

Altruism was regarded as a puzzle by Charles Darwin, who could not reconcile his 'survival of the fittest' theory of natural selection with the behavior of social insects such as worker bees, who toil on behalf of their colony but do not reproduce themselves. This riddle was solved through the work of Hamilton (1964), who proposed that genes that limit the fitness of an individual can spread if they increase the likelihood of survival of relatives that share the same gene. This concept, now known as 'kin selection', helps explain behaviors such as alarm calls in birds that attract attention and possible danger to the individual but benefit relatives that are warned by the call. The same evolutionary processes help explain altruistic behaviors in human families and societies.

Another internalizing mechanism may have to do with moral reasoning and a sense of duty, when agents can rely on universalizing reasoning (following various leads from Bentham, Kant, Smith, or religious traditions) to take an impartial perspective on the costs and benefits of their actions. Arrow (1973) famously recognized the importance of ethical rules for economic efficiency, especially as regards product safety. "This may seem to be a strange possibility for an economist to raise. But when there is a wide difference in knowledge between the two sides of the market, recognized ethical codes can be... a great contribution to economic efficiency." Of course, Weber's (2003) analysis of Protestant ethics in the establishment of capitalist institutions is a classic, and much more sweeping, perspective on the role of moral norms in the promotion of economic efficiency.

Yet another type of mechanism can involve principles of reciprocity and rely on various forms of penalties and encouragements. For example, in Ostrom's (1990) study of self-governed common pool resources such as fishing communities, the existence of sanctions is identified as a key principle that enables this self-governance. Adding to this, Fehr and Gächter (2000) show that reciprocity has implications in many economic domains, allowing for the enforcement of contracts and encouraging voluntary cooperation and collective action.

The importance of these principles of reciprocity can become even more evident when they are removed. As described in Mattli (2019), the professional norms of market traders in the NYSE and elsewhere have dramatically changed around the turn of the 21<sup>th</sup> century through a combination of transformations in the monitoring mechanisms and in the more or less explicit moral code governing their fiduciary duties to customers. While taking advantage of a client ahead of a transaction order that is likely to affect prices was sharply punished in 20<sup>th</sup> century mores, it has now, by and large, become the new normal. This type of change in professional norms has important consequences for the stability of financial markets and therefore the efficiency of the economy at large.

Finally, while Coase imagined that economic bargaining and transactions could bring the parties together and resolve inefficiencies, one can more generally consider mechanisms of centralized cooperation in which the interests of all parties are jointly considered and a common action plan is jointly determined, as providing another type of mechanism. An extreme form of such cooperation occurs when the various parties merge into a single unit, as in the formation of businesses.

This approach to internalizing externalities is again present in the work of Ostrom (1990), who cites the existence of collective choice arrangements that allow resource appropriators to participate in decision making as another core principle underpinning self-governance of common pool resources. Indeed, at a macro level it is clear that democratic systems of government represent the ultimate incarnation of this centralizing approach, with competing interests and individuals participating in, and being subject to, decision making by a single unit. The difference between a national government and a local collectivized decision-making body is simply one of scale, both of jurisdiction and of franchise.

To summarize, a tentative and probably incomplete list of possible internalizing mechanisms includes: pricing and monetary incentives; altruism and solidarity; moral norms; reciprocity and mutual monitoring; centralized cooperative decision-making; and merger. Externalities appear whenever internalization is not achieved because these mechanisms are missing or incomplete.

A number of important questions remain. As outlined above, there are clear reasons why the pricing mechanism is not appropriate in some cases. A more difficult question to answer is what factors determine which of the other mechanisms is the appropriate one to rely on in a given sphere of relations and activities. Why do cooperatives emerge to regulate relations and behaviors

in some spheres, while norms play the primary role in others? Why does parental love involve feelings more than moral norms, not to mention economic incentives? Why do fishing communities rely on reciprocal social incentives rather than centralized cooperation? The French citizen assembly that recently discussed options for the green transition was generally hostile to a carbon tax. Is this mere ignorance and prejudice, or some crowd wisdom in social mechanisms?

A further question is whether any of these internalizing mechanisms is sufficiently strong or well-directed to ensure that optimal behaviors and relations emerge in a particular context. Instinctive feelings of altruism and love may push in the direction of warm and positive parent-child relations, but there is no obvious reason to think that this will optimize the combination of parental thriving and child development that results from these relationships. Likewise, moral norms may encourage fair and respectful treatment of neighbors and acquaintances, but may be insufficient to generate the kinds of community bonds that contribute to reduced crime rates and improved democratic functioning. And as collectivizing institutions such as unions have lost power and membership, there may be fewer systems for building trust among colleagues in the workplace, eroding job satisfaction and damaging productivity.

An additional and even more fundamental question is how to determine the social optimum, especially when the individual is themselves a product of their social environment. The traditional economic approach views an individual as a rational actor with fixed preferences, but as explored by Hoff and Stiglitz (2016), research in behavioral economics and other fields has shown that preferences, perception, and cognition are themselves subject to deep social influences. Evidently, once the traditional economic conception of externalities is broadened, and the range of mechanisms for internalizing these externalities is likewise expanded, there are many significant areas requiring further research.

## Importance of distributional outcomes

There is another issue with economic analysis that should be briefly mentioned here, and may have substantial importance. Economic analysis generally tries to clearly separate issues of efficiency from distributional considerations. Efficiency, in the tradition of Pareto, is about exhausting all possibilities of finding arrangements that are better for everyone. Distributional considerations, in contrast, cannot be avoided when there are winners and losers. Separating the two types of issues, for instance, is the leading thread of a modern influential monograph on public economics (Kaplow 2008).

Pigou, as quoted above, frames the externality problem as an instance of the general issue of divergence between marginal net private product and marginal net social product, which suggests that a full account of the negative consequences of externalities requires a specification of how the “social” product is measured, including, therefore, distributional value judgments. In the Arrow extension of general equilibrium, in contrast, the externality issue is characterized in terms of the absence of certain markets. Since then, economics has mostly seen the externality problem as an inefficiency problem. This is particularly conspicuous in the case of climate change, for which the Nobel prize winning work of William Nordhaus (Nordhaus and Boyer 2000) has strenuously tried to focus on inefficiencies exclusively, even by putting artificial weights in the computation of social welfare in order to bracket out issues with the current unequal distribution of wealth in the world. John Broome (2010) has famously declared that the “most important thing about climate change” is that there exist solutions which generate improvements for all the parties, from the baseline of “business as usual” in which no abatement effort is made. Even Nicholas Stern, whose writings have emphasized ethical issues in climate change policy (Stern 2014), described climate change, in his famous Review (Stern 2006), as “the greatest and widest-ranging market failure ever seen.”

Although it is undeniably true that externalities almost always generate inefficiencies in the sense of Pareto, we worry that this focus on inefficiencies hides the equally undeniable truth that any treatment of the externalities that eliminates these inefficiencies requires deciding distributional priorities. Choosing to focus on solutions that keep the distribution unchanged, as in Nordhaus and Broome’s pleas for climate action, is not neutral, and may actually even be counterproductive when the situation appears grossly unfair to some of the parties. Again, the case of climate change illustrates the point very well. One group of countries in the world becomes very prosperous during a spell of colonizing and pillaging another group, all the while depleting a common resource (the atmosphere) as a byproduct of its development. It is no wonder that insisting on solutions to the commons problem that are good for all the parties appears shockingly unfair to those who see the situation through the lens of historical responsibilities. In an even more obvious way, rebellions against carbon pricing policies that have regressive distributional effects highlight the impossibility to ignore equity when tackling the inefficiency of private economic decisions.

In summary, our point about efficiency here is that, even if externalities generate inefficiencies, they also force us to address distributional issues because the externalities cannot be treated without deciding distributional priorities in the process. By downplaying or even hiding this fact, economic analysis may have obscured the full dimension of the externality problem.

Taking that onboard, one may start to wonder why inefficiency should be seen as the main consequence of externalities. Why not also examine the distributional impact of externalities, as an equally important issue? The folk perception of negative externalities is usually at odds with the economic approach, and views them as “harms” that justify reparation. This naïve view takes an exclusively distributional perspective. It is mistaken because it fails to see that there is also an inefficiency issue, and that the solution is generally not to prohibit the harm altogether, but to seek the “optimal” level of the harm that is most beneficial collectively. But, at the other extreme, the Coasian approach which sees this exclusively as an inefficiency issue to be addressed through a suitable transaction, leaving the allocation of rights to a political decision external to scientific analysis, may be equally misleading.

## **The Economic Realm and Social Interactions**

The idea that externalities occur through many activities, within or outside the economic sphere, and can be addressed by a variety of economic and non-economic internalizing mechanisms, suggests a rich and complex picture of interactions in each sphere and across them. Externalities may flow from one sphere to the other, and internalizing mechanisms pertaining to one sphere may be relevant to the other sphere. Most interestingly, this opens the possibility that structural interventions may affect the scale of externalities and represent an indirect way of addressing them. Instead of directly trying to mobilize internalizing mechanisms, one can change the contexts in which the externalities occur and reduce their occurrence or at least their significance.

Perhaps the most obvious example of externalities that flow between the social and economic spheres is that many if not most forms of social interaction require economic resources. From the backyard barbecue which brings neighbors together to the utility bill for the community center, the financial dimensions of the facilitation of social exchanges is never very far below the surface. Who has these resources can then determine who can benefit from the positive externalities of social interaction. A particular instance of this general influence of resources on interactions is that economic disparities across groups can structure the degree and nature of social interaction between these groups, and hence the benefit that the group can have from social externalities. Thus redistributing economic resources, in addition to encouraging their use for particular social interaction purposes through tax and subsidy methods, can be a useful set of tools in the armory of even those who focus only on the wellbeing that flows from social interactions.

Economic processes can also have indirect social impacts through the incentives they generate. For instance, technological development and globalization offer new opportunities that may divert successful people away from community engagement and leave resentful people behind (Snower and Bosworth 2016).

A domain in which economic externalities on the social sphere can be very consequential is politics. When inequalities in wealth and lax rules of political influence increase opportunities for wealthy people to weigh in the political process, either through donations, through investment promises and threats of capital flight, or through interventions in media and social media campaigns—when, for instance, only economic titans are able to fight in the arena of modern political communication ahead of the US presidential election—the ordinary citizen is submitted to influences and policy decisions over which she has little control and policy outcomes can deviate significantly from the preferences of the majority (Page, Bartels, and Seawright 2013). These effects can even be weaponized by political actors seeking to entrench their own power, for example by enacting laws and regulations that favor firms and individuals friendly to a regime and punish opposition actors, tilting the economic scale and in doing so tilting the political scale (Scheppelle 2020).

Externalities can also flow from the social to the economic sphere. Particular types of social formations and clubs provide a clear example. Adam Smith was colorful and prescient on this phenomenon as an impediment to the working of his invisible hand: “People of the same trade seldom meet together, even for merriment and diversion, but the conversation ends in a conspiracy against the public, or in some contrivance to raise prices. It is impossible indeed to prevent such meetings, by any law which either could be executed, or would be consistent with liberty and justice. But though the law cannot hinder people of the same trade from sometimes assembling together, it ought to do nothing to facilitate such assemblies; much less to render them necessary.” All one needs to do is to replace “People of the same trade” with a phrase such as “People of the same disposition in social discourse” to see the connection between relationships formed in social interactions and their possible (in this case negative, but possibly positive) spillover effects on economic markets and their functioning.

The concept of ‘social capital’ has emerged as a widely-used framework across many disciplines to describe the resources provided by these social networks and relationships. Contemporary theory on social capital originated with Bourdieu (1986), who defined social capital as the resources available to an individual that arise from their membership of a group or network.

Coleman (1988) proposed social capital as a way to introduce social forces to a rational actor paradigm, describing social capital as the trustworthiness structures, information channels, and norms that arise from relationships and networks between people. The concept was further popularized by Putnam (2000), who linked social capital to civic engagement, economic development and the functioning of democracy in regions and nations.

In an extensive review of the concept, Halpern (2005) identifies five aspects of life for which social capital is important: economic performance; health and wellbeing; crime; education; and good governance. Halpern further identifies three levels of analysis of social capital: micro (family and friend networks); meso (neighborhoods and community organizations); and macro (national and state institutions, networks and resources). Some of these social capital effects were outlined above, such as the effects of positive family relationships on child development and of community relations on crime and public health. These in turn have implications for the economic realm: child development supports academic achievement and thus income; crime rates affect livelihoods and neighborhood property values; and health impacts affect capacity to work and earn an income.

However, there are many *direct* effects of social capital on the economic sphere as well. One example is the so-called 'marriage wage premium'. Studies have consistently found evidence that male wages tend to increase with marriage or cohabitation, even controlling for selection into marriage, suggesting a partner provides some form of productivity boost. While Becker (1985) suggested this may be because marriage allows men and women to specialize in traditional gender roles, this argument is undermined by more contemporary evidence that women's wages, too, increase with marriage. A more compelling explanation may be that there are cross-productivity benefits to both partners in the form of support, motivation, and advice that help both men and women to succeed in the workplace. Supporting this, studies have shown that a partner's education level has a positive effect on wages (Jepsen 2005; Mamun 2012).

Another important example of a direct social capital effect on the economic sphere is the role of networks in job searches and labor market matching. Seminal work by Rees (1966) highlighted that both employees and employers may benefit from relying on informal job search mechanisms, such as referrals by friends and existing employees, rather than formal mechanisms, such as advertisements. Related work by Granovetter (1973) proposed that 'weak ties' to acquaintances and more distant friends play a crucial role linking dense social networks, and provide individuals with access to information from beyond their immediate environment, including information about job opportunities. Perhaps unsurprisingly, these factors lead

individuals to rely heavily on their social networks to find employment (Ioannides and Datcher Loury 2004). As a result, those with a wider network or a higher rate of employment among contacts can often obtain work more easily, find opportunities that are a better match for their skills and interests, and obtain higher wages.

Certain structural patterns can also have a joint influence both on the economy and on social cohesion. For instance, norms of policing and incarceration with a strong in-built bias against minorities may have drastic consequences on the life of certain families and neighborhoods, and the development of children, as well as on the labor market and the opportunities for economic investment in particular areas. They can also have consequences on the political game through the disenfranchisement of large parts of the electorate.

The wide array of ways in which influences operate without being properly “internalized” by the actors may seem bewildering, and may suggest that Pigou’s concern for divergence between the “private” and the “social” marginal net products must ultimately, for analytical purposes, be subsumed under fully general, but much less illuminating, problem of suboptimality. We think that such a retreat into analytical nihilism would go too far. Just as a carbon tax is considered by experts as a potent tool to address the greenhouse gas externality problem, it would be potentially crucial, for social welfare, to identify and measure the inefficiencies and distributive consequences generated by deficits of internalization in decision processes and to find what internalizing mechanisms are most suited to each case. The fact that influences can cross the boundaries of the economic, social and political spheres, and the fact that structural patterns, and not just micro-interventions, can foster or contain the externality problems, should only reinforce our sense of urgency to confront these issues.

## **Spillovers and Feedback Loops in Social Externalities**

An important consideration which makes the question of externalities urgent is that in the domain of human development, feedback loops can be expected to be generally positive, in the following sense. Influences that promote wide human flourishing and development, either in the field of physical health, mental health, cognitive and social skills, social inclusion, education and productivity, economic prosperity, and subjective well-being, tend to generate spillovers that further promote the future human development of the targets or the people they themselves influence. Conversely, influences that restrain or suppress human development tend to undermine the ability of the targets themselves to exert positive influence.

Why is this important? Positive feedback loops generate virtuous and vicious circles that reinforce the initial stimulus and potentially lead to runaway ultimate consequences. For an analogy, consider that a runaway climate change due to a positive feedback loop involving thicker and darker clouds could lead to sudden and catastrophic temperature increases. Or consider a pandemic, which spreads by contagion and follows an exponential curve because one infectious person can contaminate several. Many interactions between human beings actually follow the contagion pattern, for instance in the domain of knowledge and ideas. “Going viral” has become a colloquial expression for many things.

In the case of human development, there are certain human limitations that can prevent explosive consequences. Positive human development may stall at a level of full accomplishment that is already visible in certain privileged communities, whereas negative human development cannot go worse than de-humanization and physical elimination, as terrible as it is. Nevertheless, the assumption that positive feedbacks are pervasive in influences on human development should alert us to the possibility that the measurement of externalities needs to take into account additional stages, beyond the immediate consequences, implying a change of the order of magnitude associated with these externalities, under the presence of powerful multiplier effects.

The potential for such spillover effects is obvious in many of the examples of social externalities highlighted above. Standard computations of returns to education usually stop at the economic value of the human capital generated by education, but there are also impacts on health, and impacts on the following generations through the transmission of health, education, and a sense of opportunities by parents to their offspring. Receiving support from positive parenting, good relations with siblings and peers at school, a supportive spouse, and a positive work environment, all contributes to physical and mental health and pro-social behavior, which provides the conditions for these same positive relations to be perpetuated in an individual’s own parenting and other future relationships. Conversely, lack of support in these various domains induces negative consequences on many outcomes, including criminality. In the case of policing and incarceration policies, the impacts are felt not just by the people directly in contact with the police and the criminal justice system, but also by their families, neighborhoods, workplaces and so on.

The flow of externalities between the social and economic spheres means that economic shifts can also trigger these kinds of feedback loops. For example, when a firm decides to close a plant and lay off large numbers of workers in a community, this can create a wave of social and economic disruption. Individuals rely on their networks to find new employment, so a large

increase in unemployment in the community may make finding new work more difficult. This may in turn lead to waves of foreclosures, divorces, health problems, addictions and overdoses that affect many more people than the laid-off workers, while the breakdown of community networks may also lead to crime and damage local democratic functioning. Recent work by Case and Deaton (2020) on the epidemic of 'deaths of despair' among white working-class Americans has shown the consequences when this kind of feedback loop takes hold, in the starker possible terms.

As these examples suggest, an important channel of spillovers in human development goes through the transmission of advantage from parents to children and, in communities, from elders to younger generations. Indeed, in their research on intergeneration mobility and inequality, Chetty et al. (2014) find neighborhood social capital to be a strong correlate of upward economic mobility. In a similar vein, in their review of the effects of social networks across education, health, and labor market outcomes, DiMaggio and Garip (2012) conclude that the ubiquity these effects and their tendency to create cumulative advantages lead to higher levels of inequality in society than would otherwise be expected based on initial endowments. Nonetheless, the full extent of such impacts through the subsequent generations is far from being fully captured in standard economic calculations.

Again, a comparison with climate change can illustrate the point. CO<sub>2</sub> is actually a very weak greenhouse gas, compared to others which are also produced in large quantities such as CH<sub>4</sub> (methane). But CO<sub>2</sub> is the focus of attention because it accumulates in the atmosphere and stays there for a very long time, whereas methane disappears in a few decades. Is human development more like CO<sub>2</sub> or like methane? Arguably, the strong transmission across generations makes it very much like CO<sub>2</sub>. Therefore the fostering of human flourishing at a moment in time is likely to make a sustained addition to human flourishing over the history. The social value of this addition is therefore much greater than its immediate value.

Moreover, some variations may have amplified effects. On the negative side, such amplification may transform moderate initial costs into outright catastrophes. Being laid-off, which is a moderate loss of income prospects and social status, may trigger a downward spiral of human wreckage, especially when it happens on a large scale in a community. Down the line, it may inspire destructive actions such as protest votes that bring demagogues to power, shatter democratic institutions, break well-established international alliances and undermine large scale collective action problems.

It is also possible to imagine amplified effects on the positive side, as in personal stories of crucial support helping people move out of a poverty trap and become very influential in their own way. Max Weber's interpretation of the economic take-off of the industrial revolution in terms of change in norms could perhaps be brought to bear on this case. If human development can be stylized as involving not an indefinite exponential growth but as a transition between two regimes, one of poverty and insecurity and one of affluence and freedom, the interventions that trigger the transition to the upper regime have an enormous value if the transition can be sustained for a very long time. But they may rely, during the transition time, on amplifying mechanisms such that, once out of the lower regime trap, people become able to grow by themselves over a few generations.

One should not of course oversimplify the analysis of feedback loops. Human flourishing also has a strong competitive aspect that may supplement the positive feedback with negative components. Indeed, fostering the flourishing of some individuals or groups may enable them to crush other groups and produce an array of positive outcomes for some and negative outcomes for others. What is needed is fine-grained analysis of the different mechanisms and their potency in different contexts.

## Conclusion

This paper is meant to encourage research and contributions from all the relevant disciplines of social sciences about the pervasive human interdependence that the notion of social externalities tries to capture. Among the key questions suggested by this paper are the following:

1. What are the mechanisms that prevent internalizing externalities and what are the ways to foster internalization? The list proposed earlier—referring to pricing, altruism, moral norms, reciprocal schemes, cooperative centralization, merger—is only a first step toward a broader theory of internalizing tools.
2. What are the influences across the economic, social and political spheres that count as externalities, and what is the respective importance of structural patterns (in particular, inequalities in resources, power, social status) versus more specific decision-making processes lacking internalization?
3. What is the mix of positive and negative feedback loops that make the externality impacts potentially very large in scale and in time? Can one seek to measure these impacts in a much more comprehensive way than is currently done?

Returning to William Forster Lloyd and the subsequent literature on the Commons, it is striking how much of the focus is on what might be termed the “economic commons.” Lloyd’s original examples are to do with land and money, and of course Hardin’s (1968) formulations are equally to do with economic settings of the pasture or of the consequences for environmental commons of economic activity and of population growth. We have been emphasizing in this paper the significance of what might be termed the “social commons”. Individual interactions outside of the economic realm also have properties of the commons. Individuals contribute to and draw on a well of trust and good will and their actions in this realm have externalities too. Further, the economic and social realms interact. The economic and social commons are inseparable.

Let us conclude by revisiting the foundational conceptual issue. That human beings are strongly interdependent for their own personal development is a fact. But when do the influences they exert over one another become externalities? The paper started with Pigou’s definition of “incidental” services and disservices, then suggested to focus on patterns of influence that are not properly mediated and induce a discrepancy between private and social values. What makes an externality is not that it is incidental or unintended, because some externalities may be fully intended and controlled, but that the relevant interests of the victims (or beneficiaries) are not properly taken into account, “internalized.” The “social value” which provides the benchmark against which internalizing mechanisms must be assessed is determined by a criterion which aggregates all relevant interests. For Pigou, that was the “national dividend,” whereas modern welfare economists would rather call it “social welfare.”

This implies that the notion of externality is not purely factual but always partly normative, and therefore subject to ethical controversy. How serious a negative externality is will depend on the social weight the victims have in the social welfare criterion that is used. Different observers may have diverging evaluations of the situation of externalities in a given society, even before they consider addressing them through corrective instruments. For instance, when the victims are among the worst-off in society, the importance of the externality is magnified when the evaluator has a strong aversion to inequality. Even the existence of an externality may be in question. If the victim is so well-off that the effect under consideration has negligible social value, there is no need to make the perpetrator internalize the impact. This sounds paradoxical, because in this case, the situation could potentially be improved if the well-off victim paid the perpetrator to reduce the impact. What makes the situation better, though, is the payment itself, not the internalization, since there is no social value to internalize. In fact, it would be better if the perpetrator did not exert any restraint and just took the payment without changing behavior.

Does this conceptual issue also affect the notion of commons? *Economic* commons are easily defined in objective terms, because there is no ethical conundrum about a situation of open access to rival resources. Obviously, though, how do deal with the situation, when the populations involved are highly unequal, requires distributional choices. Now, *social* commons may be another story. The definition of what is valuable in some social commons may be contentious and involve ethical issues. For instance, the quality of social relations, the social bonds between people, the moral values which inspire the community, may have the fragility of commons because selfish depletion may plague them in a similar fashion as economic resources. But defining what is valuable about them can hardly be done without adopting ethical principles about social justice and, arguably, without making value judgments about the good life, at the personal and collective level.

That these concepts and issues are irredeemably normative may undermine their popularity among social science disciplines which are less comfortable with normative statements and policy recommendations than philosophy and economics. But there is no way we can solve the problems that plague our societies without facing the value judgments that identify them as problems. The problems of externalities and the commons it has been argued here, appear huge and pervasive. This paper is an invitation to tackle them with renewed momentum.

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