

S Y M P O S I U M D e b a t i n g
K n o w l e d g e

Toward an Epistemology of Blindness
Why the New Forms of 'Ceremonial
Adequacy' neither Regulate nor
Emancipate

Boaventura de Sousa Santos

UNIVERSITY OF COIMBRA, PORTUGAL

Abstract

My starting point in this paper is the artistic structures of the Renaissance. Resorting to what I call an epistemology of blindness, I set out to identify the limits of representation in modern science. This epistemology applies to different sciences in different degrees. I argue that the degree is particularly high in the case of mainstream economics. At the end of the paper I indicate some possible ways of advancing from an epistemology of blindness toward an epistemology of seeing.

Key words

■ epistemology ■ mainstream economics ■ social emancipation ■ social theory ■ western modernity

In his celebrated essay of 1898, Veblen criticizes classical economics for promoting an impoverished, tautological or circular relation between facts and theory, a relation that he designated as 'ceremonial adequacy' (1898: 382). Once the laws of the normal and of the natural are formulated 'according to a preconception regarding the ends to which, in the nature of things, all things bend' (1898: 382), the facts either corroborate such concept of normality and the propensity to predefined ends, and are established as relevant, or they don't, in which case they are discarded as abnormal, marginal, irrelevant. Veblen's plea was for the replacement of this normative and illusory adequacy for a real one, the abandonment of a 'metaphysics of normality and controlling principles' for the observation of

the real economic life process made of real economic actions by real economic agents.

With this plea, Veblen launched a debate in economics which has been with us ever since in all social sciences and indeed in science as a whole. The debate can be formulated in the following terms: what counts as representation, if representation counts at all? and what are the consequences of misrepresentation? The most intriguing features of this debate are, on the one hand, that it is by far easier to establish the limits of a given representation than to formulate a general coherent representation of limits and, on the other hand, that the consequences of misrepresentation tend to be different from those predicted, thus confirming, if nothing else, the misrepresentation of consequences. In other words, it has been much easier to criticize ceremonial adequacy than to create a credible alternative to it. Indeed, Veblen illustrates this condition well. At the outset of his article he mentions approvingly and as an example to follow the 'eminent anthropologist' M.G. de Lapouge, whose work is given as a symbol of the evolutionary revolution going on in other sciences (1898: 373). If, however, we read the article by Lapouge and note the scientific results accepted by Veblen, we are confronted with a delirious racial anthropology in which the binary of dolichocephalic-blond and brachycephalic types account for such laws as the law of the distribution of wealth, the law of attitudes, the law of urban indices, the law of emigration, the law of marriages, the law of the concentration of dolichoids, the law of urban elimination, the laws of stratification, the law of intellectual classes and the law of epochs.

The dilemma of this harsh evaluation of Lapouge's evolutionary science lies precisely in its almost self-evidence. The blindness of others, particularly of those in the past, is both recurrent and easy to establish. But if that is the case, whatever we say today about the blindness of others will probably be seen in the future as evidence of our own blindness. The dilemma can thus be formulated as: if we are blind, why is it so difficult to accept our own blindness? And, if that is the case, what is the point of seeing at all? My contention is that the consciousness of our own blindness, which we are forced to exercise while unveiling the blindness of others, should be at the core of a new epistemological stance which calls for a plurality of knowledges and practices, since no knowledge or practice in isolation provides reliable guidance; and for an edifying, socially responsible, rather than technical, application of science, since the consequences of scientific actions tend to be less scientific than the actions themselves.

In this paper I will address the issue of the resilience of ceremoniality in our scientific management of adequacy. Accordingly, I will concentrate on the two steepest slopes of the debate: the issue of the representation of limits and the issue of the misrepresentation of consequences. I will argue, concerning the first issue, the representation of limits, that the most intractable difficulty lies in that for modernity and for modern science there are indeed no insurmountable limits. Accordingly, the representation of limits is as provisional as the limits it represents. Concerning the second issue, the misrepresentation of consequences, I will argue that the project of modernity anticipated two mutually constituted

consequences of modern science: social regulation and social emancipation. However, to the extent that the possibilities of modernity are reduced to those of capitalism, the two consequences are torn apart: some knowledges and social practices, by far the dominant ones, take social regulation as the primordial consequence of their endeavors, while subordinate knowledges and social practices take social emancipation as their privileged consequence. The problem, however, is that, in this paradigm, the regulation that does not emancipate does not even regulate and, vice versa, the emancipation that does not regulate does not even emancipate.

In my previous work I have argued that the project of western modernity is organized around a bounded discrepancy between social experience and social expectations, herein lying its utmost novelty (Santos, 1995). For the first time in western history, experience does not have to and indeed should not coincide with expectations. Seen from the perspective of social experiences, social expectations are excessive and, vice versa, seen from the perspective of social expectations, social experiences are deficient. The normality and symmetry of this disjuncture is rendered by the twin pillars upon which western modernity is based: the pillar of social regulation and the pillar of social emancipation.

The epistemological dimension of the paradigm of modernity matches the scope and the structure of the double binding of social regulation and social emancipation. We know that any form of knowledge implies a trajectory or progress from point A, designated as ignorance, to point B, designated as knowing. Forms of knowledge are distinguished by the way they characterize both the two points and the trajectory that connects them. There is, therefore, neither ignorance in general nor knowing in general. Each form of knowledge recognizes itself in a certain kind of knowing to which it opposes a certain kind of ignorance, which in its turn is recognized as such only in contrast with that kind of knowing. All knowing is knowing of a certain ignorance, as all ignorance is ignorance of a certain knowing.

The paradigm of modernity comprises two main forms of knowledge: knowledge-as-emancipation and knowledge-as-regulation. Knowledge-as-emancipation entails a trajectory between a state of ignorance that I call *colonialism* and a state of knowing that I call *solidarity*. Knowledge-as-regulation entails a trajectory between a state of ignorance that I call *chaos* and a state of knowing that I call *order*. While the former form of knowledge progresses from colonialism toward solidarity, the latter progresses from chaos toward order. In the terms of the paradigm, the mutual binding between the pillar of regulation and the pillar of emancipation implies that these two forms of knowledge balance each other in a dynamic way. What this means is that the knowing power of order feeds the knowing power of solidarity, and vice versa. Knowledge-as-emancipation derives its dynamics from the excesses of order, while knowledge-as-regulation derives its dynamics from the excesses of solidarity (Santos, 1995: 25).

The historical trajectory of this social and epistemological paradigm is characterized by an enormous turbulence between social regulation and social emancipation, which eventually led to the cannibalization of social emancipation by

social regulation; from the *other* of social regulation, social emancipation was transformed into the double of social regulation. But since social regulation does not sustain itself without its other, its cannibalizing social emancipation led to a double crisis of regulation and of emancipation, each one feeding on the other. This is the situation in which we are now. At the epistemological level this historical process led to the total primacy of knowledge-as-regulation over knowledge-as-emancipation: order became the hegemonic way of knowing, while chaos became the hegemonic form of ignorance. Such an imbalance in favor of knowledge-as-regulation allows the latter to recodify knowledge-as-emancipation in its own terms. Thus, knowing in knowledge-as-emancipation becomes ignorance in knowledge-as-regulation (solidarity is recodified as chaos), and, conversely, ignorance in knowledge-as-emancipation becomes knowing in knowledge-as-regulation (colonialism is recodified as order). My argument is that the persistence of ceremonial adequacy and its problems, concerning both the representation of limits and the misrepresentation of consequences, have much to do with the conversion of order as a way of knowing into colonialist knowledge and with the concomitant conversion of solidarity, as a way of knowing, into chaotic ignorance. In my view, the way out of this in a context of paradigmatic transition consists in reassessing knowledge-as-emancipation, granting it primacy over knowledge-as-regulation. This implies, on the one hand, that solidarity should be turned into the hegemonic form of knowing, and, on the other hand, that a certain degree of chaos should be taken as a consequence of the relative negligence of knowledge-as-regulation.

1 The Representation of Limits

In the study of the representation of limits in economics and in social sciences in general, it will be helpful to consider the case of sciences which have faced the issues of both representation and limits most dramatically, either because of the nature of the objects they study or because of the type of technical capabilities they have been designed to develop. I mean archeology, involved in the study of objects and behaviors in very distant time; astronomy, involved in the study of objects very distant in space; cartography, concerned with the representation of spaces through maps; and photography, concerned with representation as 'reproduction'. It will still be useful to consider an artistic activity, painting, which, at least since the Renaissance, has been haunted particularly by the question of representation.

Drawing freely on the procedures and strategies that these knowledges and practices have designed to overcome the dilemmas and fallacies of representation, I want to show, first, that such procedures, strategies, dilemmas and fallacies are at the core of modern scientific knowledge as a whole and, second, that within the range of alternatives made possible by such procedures and strategies, social sciences in general and mainstream economics in particular have chosen the alternatives least suited to promote solidarity as a form of knowing. Underlying

my argument is the idea that such procedures and strategies are the meta-technologies that allow the scientist to produce recognizable and convincing knowledge and that such meta-technologies, which are internal to the scientific process, are as partisan and arbitrary as the technological interventions of science in social life. The key concepts in my analysis are the following: scale, perspective, resolution, and signature. All of them have been developed by the above-mentioned disciplines as they have confronted, in closest contact, the limits of representation and addressed the dilemmas emerging therefrom.

The Determination of Relevance

The first limit of representation concerns the question: what is relevant? The relevance of a given object of analysis does not lie in the object itself but in the objectives of the analysis. Different objectives produce different criteria of relevance. If we would submit the choice of objectives to the open and potentially infinite scientific discussion that characterizes the analysis of scientific objects, we would never be able to establish a coherent criterion of relevance and carry out any intelligible scientific work. As long as we discuss objectives we cannot agree on objects. Since the discussion is potentially infinite, the only way to make science possible at all is to postulate the equivalence or fungibility of alternative objectives. It is therefore by denying or hiding the hierarchy of relevance among objectives that modern science establishes the hierarchy of relevance among objects. The distortion is thus imminent and indeed unavoidable. The established relevance is a sociological, or better, political, economic fact disguised as an epistemological evidence. The invisibility of the disguise is premised upon the credibility of the distortion. The distortion is made credible by creating in a systematic way credible illusions of correspondence with whatever is to be analyzed. Two procedures are used to produce such illusions: *scale* and *perspective*.

We don't observe phenomena. We observe scales of phenomena. Though scales are important to all the disciplines I am drawing from, it is in cartography that scales are most central. Indeed, the main structural feature of maps is that in order to fulfill their function of representation and orientation they inevitably distort reality. Jorge Luis Borges told us the story of the emperor who ordered the production of an exact map of his empire. He insisted that the map should be exact to the most minute detail. The best cartographers of the time were engaged in this important project. Eventually, they produced the map and, indeed, it could not possibly be more exact, as it coincided point by point with the empire. However, to their frustration, it was not a very practical map, since it was of the same size as the empire (Borges, 1974: 90).

To be practical, a map cannot coincide point by point with reality. However, the distortion of reality thus produced will not be considered inaccurate if the mechanisms by which the distortion of reality is accomplished are known and can be controlled. Maps distort reality through three specific mechanisms which, since they are used systematically, become intrinsic or structural attributes of any

map. Such mechanisms are: *scale*, *projection*, and *symbolization*. For the purposes of this paper I will limit myself to scales.¹

Scale, as Monmonier has defined it, 'is the ratio of distance on the map to the corresponding distance on the ground' (1981: 4). Scale involves, then, a decision on more or less detail. 'Since large-scale maps represent less land on a given size sheet of paper than do small-scale maps, large-scale maps can present more details' (1981: 4). Since maps are 'a miniaturized version' of reality (Keates, 1982: 73), mapmaking involves the filtering of details, 'the selection of both meaningful details and relevant features' (Monmonier, 1981: 4). As Muehrcke puts it, 'what makes a map so useful is its genius of omission. It is reality uncluttered, pared down to its essence, stripped of all but the essentials' (1986: 10).² One easily understands that the decision on scale conditions the decision on the use of the map, and vice versa: 'Small-scale maps are not intended to permit accurate measurements of the width of roads, streams, etc., but rather to show with reasonable accuracy the relative positions of these and other features' (Monmonier, 1981:4).

Geography, which shares with cartography the concern for spaces and spatial relations, has also contributed important insights on scales, both scales of analysis and scales of action. As to the former, there are phenomena that can only be represented on a small scale, such as climate, while others, like erosion, for instance, can only be represented on a large scale. This means that the differences in scale are not simply quantitative but also qualitative. A given phenomenon can only be represented on a given scale. To change the scale implies a change of the phenomenon. Each scale reveals a phenomenon and distorts or hides others.³ As in nuclear physics, the scale creates the phenomenon. Some of the fallacious correlations in geography derive from the superimposition of phenomena created and analyzed on different scales. The scale is 'a coherent forgetting' (Racine, 1982: 126) that must be carried out coherently. Mediating between intention and action, scale applies also to social action. Urban planners as well as military chiefs, administrators, business executives, legislators, judges and lawyers define strategies on a small scale and decide day-to-day tactics on a large scale. Power represents social and physical reality on a scale chosen for its capacity to create phenomena that maximize the conditions for the reproduction of power. The distortion and concealment of reality is thus a presupposition of the exercise of power.

Different scales of analysis create different patterns of regulation and promote different action packages. As regards *regulation patterns*, it must be borne in mind that representation and orientation are two antagonistic modes of imagining and constituting reality, one geared to identifying position, the other geared to identifying movement. Large-scale regulation is rich in details and features; describes behavior and attitudes vividly; contextualizes them in their immediate surroundings; is sensitive to distinctions (and complex relations) between inside and outside, high and low, just and unjust. It invites a pattern of regulation based on (and geared to) representation and position. On the contrary, small-scale regulation is poor in details and features. It skeletonizes behavior and attitudes, and

reduces them to general types of action. It provides sense of direction and schemes for shortcuts. In sum, small-scale regulation favors a pattern of regulation based on (and geared to) orientation and movement.

Besides having different regulation patterns, different scales of analysis also condition different *action packages*. An action package is a connected sequence of actions structurally determined by predefined boundaries. I identify two kinds of boundaries: those defined by range and those defined by ethics. According to range, we can distinguish two ideal-types of action packages: the *tactical* and the *strategic action package*. According to ethics, we can also distinguish two ideal-types of action packages: the *edifying* and the *instrumental action package*. In the light of the previous examples, I would suggest that large-scale analysis and regulation invites tactical and edifying action packages, while small-scale analysis and regulation invites strategic and instrumental action packages. Social groups or classes that are predominantly socialized in one of these forms of analysis and representation tend to be specifically competent in the type of action package associated with it. In a situation in which large-scale and small-scale analysis and regulation intersect, the large-scale action package tends to be defensive and to regulate normal, routine interaction or, at the most, molecular struggles, while the small-scale action package tends to be aggressive and to regulate critical, exceptional situations, triggered by molar struggles. These tendencies may hold true irrespective of the class nature of the social groups involved in the specific action package.

Of all the social sciences, mainstream economics has been the most focused on orientation, with greatest involvement in science-based intervention in social life. For that reason it has favored small-scale analysis, of which mathematical modeling is the most characteristic illustration. Small-scale analysis has been as prevalent in macro- as in micro-economics. As in the case of maps, small-scale analysis privileges a pattern of regulation geared to orientation and movement and an action package based on strategic and instrumental actions. The efficacy of the orientation is premised upon the vagueness of representation, that is, neglecting details and contrasts, dismissing submerged meanings and practices, disregarding different durations both of declining qualities and emergent qualities. In such a mode of representation the uncertainty of the position is made irrelevant by the dynamics of the movement. Based on such a representation, the efficacy of the orientation depends upon one condition: it must be sustained by extra-scientific political forces powerful enough to promote movement to cover for the social costs of the negligence of position.

This means that the preference for small-scale and thus for orientation over representation is an epistemological decision which, rather than sustaining itself, is grounded on a sociological, political economy fiat. The definition of the relevant features of a given course of action is determined by the regulation objectives, and not the other way around. Different objectives and thus different interests create different relevant facts.

This may be illustrated with the analysis of a given labor conflict in a factory producing for a transnational corporation through franchising or subcontracting.

The factory code, that is, the production law of the workplace, as a form of local legality, regulates the relations in production in great detail, in order to maintain workplace discipline, prevent labor conflicts, reduce their scope whenever they occur, and eventually settle them. Labor conflict is the nuclear object of the factory code, because it confirms, *a contrario*, the continuity of the relations in production, which are the *raison d'etre* of the factory code. In the wider context of national state labor law, the labor conflict is only a dimension, however important, of industrial relations. It is part of a broader network of social, political, and economic facts in which we easily identify, among others, political stability, inflation rate, income policy, and power relations among labor unions, business and government. In the still wider context of the transnational regulation of international franchising or subcontracting, the labor conflict becomes a minute detail in international economic relations, hardly worth mentioning.

Thus, the different regulatory orders operating on different scales translate the same social objects into different relevant objects. However, since in real life, the different regulatory scales do not exist in isolation but rather interact in different ways — in our example the regulatory purposes of the three scales converge in the same social event - there may be the illusion that the three regulatory objects overlap point by point. In fact, they do not coincide at all. Workers and sometimes the employer tend to have a large-scale view of the conflict, with all its details and relevant features, a concept molded by local regulation. Union leaders and sometimes the employer tend to see the conflict as a crisis in a process of continuous industrial relations. Their view is predominantly molded by national state regulation; consequently, their actions in the conflict aim at a compromise between the medium-scale and the large-scale view of the conflict. For the transnational corporation, the labor conflict is a tiny accident in a globally designed investment and production system. If not promptly overcome, it can be easily circumvented by moving the production to another country.

Transnational corporations favor the small-scale view of the conflict because this is the scale at which they organize their global operations. Together with the multilateral financial institutions, they are the small-scale actors *par excellence*, covering vast parts of the globe and most drastically reducing the amount of detail or contrast as a condition of operational efficacy. Mainstream economics tends also to favor the small-scale view of the conflict. The fact that this view converges with the view of the transnational corporations is, in epistemological terms, a coincidence, and, in political economy terms, the coverup for a combination of interests. Mainstream economics creates the reality that maximizes the efficacy of the regulation it propounds.

The Determination of Degrees of Relevance

Once relevance is established a further question must be asked: how relevant? In Western modernity and in modern science the degrees of relevance are established by another procedure operating in tandem with scale: *perspective*. Leon Battista

Alberti (1404—1472) is considered the founder of one-point perspective in Renaissance painting, even though the mathematical laws of perspective were formulated for the first time by the Florentine architect Filippo Brunelleschi (1377—1446). In his treatise *De Pictura* of 1435 Alberti compares the painted picture to an open window: 'a picture, in his view, should be made to seem as if it were a pane of transparent glass through which we look into an imaginary space extending in depth' (Andrews, 1995: 1). In order to achieve that, he devises a method for drawing a mathematically correct representation of space in which the relative size of objects at different distances and the apparent convergence of parallel lines will be as convincing to the eye in art as they are in nature (Gilman, 1978: 17). As Gilman says, '[i]n the fifteenth and early sixteenth century . . . perspective arises out of and gives expression to a sense of certainty about man's place in the world and his ability to understand that world' (Gilman, 1978: 29). The system of proportions between the objects to be painted and their images and between the distance of the observer's eye and the painting creates an intelligible world organized around the viewpoint of the spectator. The credibility of this 'illusionistic' art (Gilman, 1978: 23) lies in the mathematical precision of the individual's point of view. Renaissance's perspective is both a show of confidence in human knowledge and the artistic counterpart of individualism.

However, this precision and this confidence are obtained at a very high price: the absolute immobility of the eye. The illusion is real on the condition that the painting be seen from a predetermined and rigidly fixed point of view.⁴ If the spectator changes position, the illusion of reality vanishes. Gilman is thus right when he says that '[t]he very fulness and definition of perspective space implies the radical incompleteness of our vision, and the point of view becomes a drastic limitation, a set of blinders, as well as an epistemological privilege' (Gilman, 1978: 31).

The imaginative structure of proper perspective underlies, as I said, both modern art and modern science. It is also through perspective that degrees and proportions of scientific relevance can be established. There is, however, an important difference in the operation of perspective in art and in science. In modern art the painter conceives of the spectator as the radical other. The painter paints *for* the ideal spectator. The painter imagines the spectator's gaze in order to deceive it effectively. The painter is the only one with access to reality and both painter and spectator know that. The illusion of reality develops in tandem with the reality of the illusion. On the contrary, the modern scientist sees him or herself as the ideal spectator, at the center of the privileged point of view to observe the reality fully revealed to his or her gaze. Even though he or she does other things besides being a mere spectator — otherwise no scientific work would get done - these other things, other than having the spectator in mind, are the product of the spectator's mind. In other words, they are the spectator at work. As the creator is absorbed by the spectator, the reality of the illusion is cannibalized by the illusion of reality and, as a consequence, the latter becomes the reality of reality. Accordingly, the modern scientist believes in the illusions he or she creates to an extent that the painter does not. Nor would the scientist be as comfortable

with the epithet of 'illusionistic science' to characterize his or her work as the painter was with that of 'illusionistic art'.

This conflation of the creator with the spectator in modern science had a crucial consequence. Because the spectator was always externalized, the painter could make a distinction between the ideal spectator, the one eye of the viewer, and the significant spectator, the patron or *mecenas*. On the contrary, the scientist could not make such a distinction, the ideal and the significant spectator being one and the same. This made it impossible to ask for and to question the significant spectator for whom the scientist, as a creator, works. The negative consequences of such unquestioning grows with the conversion of science into a productive force and thus with the growing impact or even interference of the significant spectator on the work of the scientist.

Of all social sciences, mainstream economics has been the one in which the choice among alternative significant spectators has been most drastically reduced to a single one, the capitalist entrepreneur. As the latter's impact on scientific work grows, the invisibility of the reality of illusion allows for the illusion of reality to become the entrepreneur's reality. The latter's preferences and limitations, rather than being blinders, become epistemological privileges. Consequently, a political economy fiat could be credibly smuggled into the scientist's epistemological claims. The efficacy of the orientation made possible by small-scale analysis is reinforced by the monopolistic appropriation of the significant perspective.

The Determination of Identification

I have so far dealt with the first limit of representation, the determination of relevance. The second limit of representation deals with the question: how to identify it? Once the relevant level of observation and analysis has been established, it is necessary to identify the relevant phenomena. Identification consists of two major demarches: detection and recognition. Detection has to do with the definition of the traits or features of a given phenomenon. Recognition consists in the definition of the parameters according to which the detected phenomena will be classified as a distinct element of a system of explanation or of a system of interpretation. The procedure underlying both detection and recognition is *resolution*.

Resolution refers to the quality and details of a given identified phenomenon, be it a social behavior or an image. Resolution is central to both photography, remote sensing technologies, and archeology. In photography, resolution or resolving power is the capability to image spatial detail. This capability may be referred either to the film or to the lens. The resolution of the film is determined by the size distribution of its silver halide grains (the larger the grains, the poorer the resolution). The resolution of the lens is determined by its optical properties and size. The number of line-pairs per millimeter defines the level of resolution (Avery and Berlin, 1992: 36). In remote sensing technologies the most important type of resolution for my purposes here is spatial resolution: 'it is the measure

of the smallest object that can be resolved by the sensor or the area on the ground represented by each pixel. The finer the resolution, the lower the number' (ERDAS, 1997: 15).⁵ In archeology the resolution refers to the homogeneity of events and behavior and their relation to the archeological record (Gamble, 1989: 23).

There are many degrees of resolution but they are usually reduced to two: Coarse-grain and fine-grain resolution. For instance, in photography high-speed films operate with minimal lighting conditions but only incorporate large-diameter grains and for that reason have a lower resolution than low-speed films (Avery and Berlin, 1992: 38). In archeology, a coarse-grained assemblage is one where at any one location the correspondence between an event and the archeological record it generated is poor; and, conversely, a fine-grained assemblage is one where the materials deposited reflect more precisely the activities that were carried out at those locations and in relation to the immediate environment (Gamble, 1989: 23, 24). For my purposes here it is important to note that whenever a system of resolution is constituted by more than one component, the resolution level of the system is determined by the component with lowest resolution. For instance, in photography the resolution system is constituted by two components, the film and the lens. If the two don't have the same level of resolution, the resolution level of the photography will be determined by the lowest-rated component (Avery and Berlin, 1992: 37).

In my view, resolution, just as scale and perspective, is at the core of modern science and operates at two different levels: the level of methodology and the level of theory. Both methods and theories are present in the scientific identification of objects to be analyzed; but methods predominate in the process of detection, while theories predominate in the process of recognition. The quality of the scientific identification is thus determined by a system of resolution comprised of two components: methods and theories. It is commonly observed that the development of research methods has outpaced the development of theories particularly in the social sciences. For that reason it is not surprising that it is still common to go back to the nineteenth-century founding fathers to look for theoretical guidance, whereas the research methods and the data-gathering techniques we use today are extremely more sophisticated than those available in the nineteenth century. This means that the resolution level of our methods is higher than the resolution level of our theories and, consequently, that while the quality of scientific detection tends to be fine-grain, the quality of scientific recognition tends to be coarse-grain. In other words, our detection capabilities by far exceed our recognition capabilities.

Even though this discrepancy is inherent to all social sciences, for reasons that deserve to be elucidated, mainstream economics is the one in which the gap between detection resolution levels and recognition resolution levels is widest. And probably for the same reason, it is also the one in which the very existence of the gap has been most fiercely denied. As a result, because the level of resolution of identification is determined by the lowest-rated component, that is, by theory and thus by recognition resolution, mainstream economics operates and

intervenes in social life in a coarse-grain mode but manages to legitimize its operation and intervention as if it were of fine-grain resolution quality.

The consequences of economics' interventions in society cannot but betray the excess of this claim. Among such consequences, the most negative can be designated as the *fallacy of exogeneity*. It consists in defining as relations among exogenous entities the internal transformation such entities undergo as their mutual endogeneity develops. Sam Bowles has recently exposed this fallacy in his analysis of market preferences (Bowles, 1998). As Bowles emphasizes, mainstream economics has cherished, as one of its fundamental axioms, the axiom of the exogenous preferences, the celebrated minimalist conception of an under-socialized *homo economicus*, an individual actor with exclusively self-regarding and outcome-based preferences (Bowles, 1998: 103). Against this vision he convincingly argues in favor of the endogeneity of preferences, that is, the extent to which the markets affect the preferences that are supposed to impact on it as external forces. In particular, he focuses on a group of preferences which he calls 'nice traits' - 'these are behaviors which in social interactions confer benefits on others' (Bowles, 1998: 92) - and shows how the markets may block or discourage the development of such traits.

In my view, it is not surprising that the fallacy of exogeneity should occur most specifically in markets. Contacts in markets are ephemeral and impersonal. Given the high resolution of methods, mainstream economics can detect, as individual and separate, entities or factors that keep minimal distances among themselves. The meaning of such distances, that is, the understanding of what might be separating entities or, on the contrary, uniting them can only be provided by theory and recognition resolution. Since the latter is course-grain, it is unable to discriminate contexts, networks, interpenetrations and embeddedness. This explains why the endogeneity of preferences does not emerge clearly and is accordingly discarded.

The Impossibility of Duration

The third limit of representation blocking the road to unceremonial adequacy is the limit of time and time perception. Once relevance has been determined and the object identified, it is necessary to determine its temporal location. All objects exist in time-spaces and therefore neither their relevance nor their identification can be considered completed before the time-spaces are determined. This determination is most difficult because while in scales, resolution, and perspective the distinction between subject and object operates unproblematically, in the determination of time-space the subject and the object both exist in time-space. To solve this difficulty, modern science has tried to neutralize differences by hypostasizing the most elusive frame: the *hic et nunc*, the here and now, presence and simultaneity. Modern perspective has made possible such simultaneity between subject and object, between painter and spectator. Through perspective, simultaneity is attained scientifically, since once the viewer is immobilized by the logic of the system, the space is totally unified. '[S]imultaneity in perceiving a

picture, also requires a synchronization of what is represented; by grasping the picture spatially as a unit we also assume the depicted events to be simultaneous' (Andrews, 1995: 35). Disregarding time differences is thus a condition of analytical confidence. However operational, this present-orientation and simultaneity are totally arbitrary and vulnerable to the *fallacy of false contemporaneity*. This fallacy consists in assuming that the contemporaneity of a given event or behavior is equally so for all the participants in it. When World Bank officials meet with African peasants, it is assumed that the contemporaneity or coeavellness of both groups is generated by the simultaneity of the encounter. The fact that the peasants' present reality is conceived by them as a past present and by the World Bank as a present past, however crucial, gets obscured and goes uncontrolled. In this context there is no room to account for the noncontemporaneity of the simultaneous.

Of all social sciences, mainstream economics is the most prone to navigate in the fallacy of false contemporaneity. This is linked to the features of determination of relevance and identification characteristic of mainstream economics. Starting with relevance, the privilege granted to small-scale analysis means also that orientation and movement are privileged to the detriment of representation and position. The compression of time is thus particularly drastic; duration cannot be grasped and residues become indistinguishable from emergent qualities. To the extent that residues and emergences are still distinguishable, the orientation bias of small scale tends to be overzealous in the identification of obstacles to movements and consequently to exaggerate the identification of observed features as residues. While archeology excels in finding residues in order to explain the evolution of behavior patterns, mainstream economics excels in finding them and in discarding them as trash. It is ironic that much of what the archeologists of the twenty-second century will know about us will be revealed by the trash we left behind.⁶ This should alert us to the situatedness of our findings and the relevance we ascribe to them. The epistemology of trash cannot be as easily discarded as the trash it refers to.

Turning now to the determination of the degrees of relevance, I would like to show how the use of perspective by mainstream economics prevents the identification of durations, rhythms, sequences, tempos, synchronies and dissynchronies. As I mentioned above, what is characteristic of mainstream economics in this regard is the monopolistic appropriation of the significant spectator by the capitalist entrepreneur. The dramatic intensification thus produced of the significant other, smuggled in as the self, has two main consequences: a hyper-spatialization of past times and fast-speed interventions.

The lessons from archeology are particularly pertinent in this regard. The temporal construction of the archeological records can occur in two ways. The first, extremely rare, can be called the *Pompeii mode* (Binford, 1981). It occurs whenever it is possible to determine rigorously the dates in which different events and objects enter simultaneously in the archeological record. Hiroshima will be the Pompeii of the archeologists of the future. The second mode, much more common, can be called the *palimpsest mode*. It refers to the situations in which

the same archeological layers comprise objects and residues from very different periods and times not susceptible to exact dating.

The hyper-spatialization of past time in mainstream economics consists in an inherent bias in favor of the Pompeii mode which, given its extreme rarity (e.g. global oil shock; a world war; a global financial crash, etc.), implies the systematic misrepresentation of social palimpsests as social Pompeiis. This bias derives from the pressure made intense by the intensification of the significant spectator, to privilege clearly delimited, highly homogeneous and simultaneous findings.

The second consequence is fast-speed intervention. Highly spatialized simultaneous social fields call for fast-speed interventions, the ones that maximize the orientation and movement preferences of small scale. Fast-speed interventions, like fast-speed films, require very little exposure and can operate in virtually all conditions; but, also like fast-speed films, they have a very low resolution level; they are coarse-grain interventions. Their speed, together with the coarseness of their resolutions, makes such interventions both highly intrusive, highly fallible, and highly destructive. The Rapid Rural Appraisals by the World Bank economists throughout Africa and Asia are a good example of fast-speed interventions.⁷

This type of intervention, which indeed, irrespective of the names they bear, is much more common than what we may imagine, symbolizes the destructive side of scientific research. Since the very beginning modern science has assumed a posture which Schumpeter was to attribute later on to capitalism: the capacity for creative destruction. In epistemological terms, such posture resides in the very idea of scientific revolution conceived of as a radical break with and a departure from all previous knowledges. Bachelard has formulated it better than anyone else with his concept of *rupture epistemologique* (1972). By discarding all the alternative knowledges, modern science has revealed itself as a waste maker, a condition that we, the few privileged inhabitants of consumer society, share as well. This is, by the way, another dimension of the above-mentioned epistemology of trash and, indeed, another aspect of a political economy of waste making in modern science. Two questions must be asked in this regard: how much waste do we have to make in order to produce scientific consequences? Who suffers most with the pollution we thereby produce?

Of all the social sciences mainstream economics has been most involved in fast-speed intervention. For that reason it is most directly confronted with the dilemma which I will call the *excavation dilemma*. Excavation is the core procedure of archeological research. It is through excavation that one has access to the archeological record. The excavation site is a well-delimited area where the systematic search for residues deposited underground takes place, a search that when successful is the only way to identify behavioral patterns and adaptive strategies in our most ancient past. The dilemma, however, is that once the excavation is conducted and the residues are collected, the archeological work destroys the archeological site forever, making it impossible to start all over again: once taken out of the depositional formations in which they were integrated, the collected objects cannot be put back in. The dilemma resides therefore in that an

eventual advancement in knowledge necessarily entails a definitive and irreversible destruction: the destruction of the relations among objects and, with it, the elimination of any possible alternative knowledge about them.

This dilemma has been fully acknowledged by archeologists, and strategies around it have been designed. For instance, according to Sharer and Ashmore, '[S]ince the excavation process itself destroys an archeological site, it should be confined whenever possible to situations in which adequate planning, time and money are available to ensure the maximum useful knowledge about the past is recovered' (1987: 564). Similarly, Robert Dunnell considers that excavation 'is expensive, destructive to the record and at best yields great detail about a few widely separate sites . . . Excavation, once the hallmark of archeology, will [in the next fifty years] be employed only when all other means of data acquisition have been exhausted' (1989: 65).⁸

In mainstream economics, on the contrary, this dilemma has never been acknowledged, in spite of the fact that it is dramatically present in most of the scientific interventions and, above all, in fast-speed interventions. As a consequence, and contrary to what happens in archeology, no alternative research strategies have been designed. The blindness vis-a-vis this dilemma increases the possibility that the creative destruction of mainstream economics becomes just destructive destruction.

The Determination of Interpretation and Evaluation

The final limit of representation has to do with interpretation and evaluation. It is through interpretation and evaluation that our research objects are integrated in the wider contexts of politics and culture at which level science-based transformation occurs. Such integration is made possible by establishing links between social action and patterns of political and cultural formation. Because of the nature of the scientific object, archeology is probably the science in which establishing such link is the most central task. The term used by some archeologists to designate such link is *signature*. In my view this concept has heuristic capabilities far beyond archeology. In archeology, signature describes the link between behavior and distinctive patterns of residue formation (Gamble, 1989: 22). Signature is thus about authorship, intelligibility, and purposefulness. This means that interpretation and evaluation is premised upon the knowledge of the agents involved (authorship), their knowledge practices (intelligibility), and their projects (purposefulness).

This is a domain in which the limits of representation already dealt with converge to make the signature of reality in social sciences in general and in mainstream economics in particular highly deficient. Concerning agents, the smaller the scale of analysis the stronger the emphasis on orientation and movement. The representation of agents tends to privilege those that move and need orientation, that is, docile bodies. The smaller the scale, the higher the docility of the bodies. The one-point perspective reinforces this effect. The immobility of the spectator's eye, which is particularly intense in mainstream economics, can only guarantee

the illusion of reality to the extent that mathematical proportions are strictly kept. The represented bodies have to be kept in a cage, be it an iron cage or a rubber cage. Outside the cages there are no agents, whether friends or enemies. At the most, there are strangers, indifferent bodies. Docile bodies and strangers are thus the two possible categories of agents, hardly a fine-grain resolution of social agency.

The impact of perspective on the representation of knowledge practices is equally constraining. As Gilman reminds us, the intelligibility of the world made possible by Renaissance perspective was obtained at an exacting price: the immobility of the eye and the blinders necessary to create the single view (Gilman, 1978: 31). This single view is what best characterizes modern science and its epistemological break both with common sense and all other alternative knowledges. The other side of the strength of the single view is its incapacity to recognize alternative views. Social practices are knowledge practices, but they can only be recognized as such to the extent that they are the mirror image of scientific knowledge. Whatever knowledge does not fit the image, is discarded as a form of ignorance. The single view rather than being a natural phenomenon is the *ur*-product of the creative destruction of modern science. The epistemological privilege that modern science grants to itself is thus the result of the destruction of all alternative knowledges that could eventually question such privilege. It is, in other words, a product of epistemicide. The destruction of knowledge is not an epistemological artifact without consequences. It involves the destruction of the social practices and the disqualification of the social agents that operate according to such knowledges. In mainstream economics the particular intensity of the significant spectator has imposed a specially arrogant single view, and, as a consequence, the epistemicide has been broader and deeper.

Finally, the purposefulness in social action, that is, the agents' projects, is the domain in which the scientific signature of reality is most deficient. Projects are an anticipation of reality and as such imply a distance from current experience. This anticipation and distance has a specific temporality, the temporality of a bridge among noncontemporaneous courses of action through aspiration and desire. The fallacy of false contemporaneity analyzed above makes such a bridge a useless device, thus turning aspiration into conformism and desire into the desire of conformism. Moreover, the type of coarse-grain identification characteristic of modern science creates, as I mentioned above, a bias in favor of the proliferation of residues to the detriment of emergent qualities, a condition that leads to disqualifying as retrospective all the emergent qualities that don't fit the qualities of the project legitimated by science. The narrower the project, the wider the retrospective.

The limits of signature, be it of authorship, intelligibility or purposefulness, are therefore strict and, of course, the possibilities of interpretation and evaluation cannot exceed them. The result is an imaginative structure consisting of docile bodies and strangers, victims of successive epistemicides, navigating in a sea of residues 'swept along into the future that others have laid out for them' as the temporally poor described by Rifkin (1987: 166).

This signature of social practice is highly selective and therefore the link it establishes between agents and patterns of behavior is at best speculative. As I indicated, at each stage of the signature process many alternatives are left out: alternative types of agents other than docile bodies and strangers; alternative knowledges other than scientific knowledge; alternative projects other than the project of the significant spectator. Dealing with discarded alternatives means to deal with nonexistent entities. There are at least two ways in which nonexistent entities may 'occur' and, accordingly, two ways of trashing alternatives. First, there are alternatives that never occurred because they were prevented from emerging. Second, there are alternatives that did occur; but the types of scale, perspective, resolution, time compression, and signature used by science did not recognize them at all, or took them for residues. Only a *sociology of absences* will be able to elucidate us about the limits of representation at work in each situation. While in the first situation, the alternatives did not occur, we are dealing with silences and unpronounceable aspirations. In the second situation, in which the alternatives did occur, we are dealing with silencings, epistemicides and trashing campaigns.

Possible alternatives are, in epistemological terms, the missing links, the incomplete records, black holes, voids. Modern science suffers in general from *horror vaccui*. Whenever possible, it discards alternatives in order to eliminate epistemological disturbances. The objectivity and the rigor of scientific knowledge is indeed a byproduct of *horror vaccui*. Mainstream economics is, of all the social sciences, the most haunted by *horror vaccui*. The specific way it has dealt with the limits of relevance, identification, duration and interpretation and evaluation makes *horror vaccui* look particularly threatening and destabilizing. At the other end of the spectrum we could locate archeology which, however sharing with all the other social sciences the same *horror vaccui*, takes a much more relaxed attitude to it. It tries to domesticate it rather than eliminate it. Glenn Stone, for instance, speaks of negative evidence in these terms: 'negative evidence is a form of data. "Data" are taken to be observations made of archeological phenomena, as opposed to the phenomena themselves. . . . Negative evidence refers to the failure to observe a given phenomenon (or lacunae in data sets)' (1981: 42). And he proposes that the interpretation of such absences be an integral part of the archeological analysis.

The sociology of absences is a daunting task. As we shall see, it requires an epistemology of absences. Without it, however, interpretation and evaluation are based on very blurred, coarse-grain signatures of social life. In fact, rather than signatures, they are wandering names looking for docile bodies and strangers.

2 Toward an Epistemology of Seeing

An insight into the consequences of the epistemology of blindness is not, in itself, an insight into the epistemology of seeing. Therefore, I will start from the

consequences of the epistemology of blindness and move later to delineate an epistemology of seeing.

The consequences of blindness manifest themselves as the misrepresentation of consequences. Such misrepresentation must be analyzed at two levels: capacity to regulate and capacity to emancipate. In general, modern science has represented the phenomena in ways that fit its regulatory imagination. In the case of mainstream economics, this seems to be particularly true. The specific social construction of agents, as both docile bodies and strangers, is, in fact, geared to making social regulation particularly easy. Docile bodies and strangers or indifferent people are the easiest possible targets of social regulation. One can even say that the undersocialized *homo economicus* looks like a hero when compared with either docile bodies or strangers, the two versions of the oversocialized *homo sociologicus*. However, as I hope to have shown, the oversocialized *homo sociologicus* is not the opposite of the undersocialized *homo economicus*; it is rather its double. The *homo sociologicus* is the *homo economicus* in action.

The facility of regulation is merely apparent for the following two reasons, one having to do with agents and the other with actions. First, I have claimed that the bounded tension between experience and expectations is one of the most distinctive characteristics of modern regulation. The agents constructed by mainstream social sciences and particularly by mainstream economics are incapable of living through that tension. Docile bodies experience but do not expect, that is, their expectations mirror their experiences one to one. On the other hand, strangers are indifferent both to experience and expectations. They can live both separately and without any tension. In either case, the tension between experience and expectations is lost. Once this occurs, the order, which is the point of knowing in the knowledge-as-regulation, conflates with colonialism, the point of ignorance in knowledge-as-emancipation. In other words, it becomes the colonialist order, the degree zero of social emancipation. At the degree zero of emancipation, however, modern regulation cannot sustain itself, since it is the tension between regulation and emancipation that keeps both alive and credible.

The facility of regulation is also only apparent for another reason: because of the types of social actions constructed by science. While modern regulation is based on the tension between experience and expectation, it is also based on the symmetry between action and consequences. Modern science has been entrusted with the task of producing and reproducing this symmetry. Indeed, what makes a given action scientific is the control it exerts over the consequences stemming from it.

It is today well established that this symmetry, if ever it existed at all, has vanished forever. Our common experience is rather that of a growing asymmetry between the scientific capacity to act, which has increased exponentially, and the scientific capacity to predict consequences, which at best has stagnated. Accordingly, the actual consequences of a given scientific action tend to be far less scientific than the action itself.

The notion that consequences are therefore excessive in relation to scientific action is probably the manifestation of another fallacy of exogeneity, the

exogeneity between actions and consequences. Having in mind my previous analysis of the limits of representation particularly as regards mainstream economics, the picture of scientific action that emerges is one constructed by (1) very small-scale determination of relevance combined with a single-view perspective in which the significant spectator carries a heavy weight; (2) a coarse-grain identification resolution based on an imbalance between detection methods and recognition theories; (3) a gross distortion of sequences and temporalities by imposing Pompeii premises on social palimpsests and false contemporaneity on non-contemporaneous social layers; (4) a poor capacity to decipher the signatures of social practices, both concerning agents but also concerning knowledge practices and projects. A scientific action thus constructed bears the imprints of the consequences which the fallacy of exogeneity attributes then to external non-scientific causes. The 'less-than-scientific' character of the consequences is inscribed in the very 'scientific' character of the actions from which they derive. A scientific form of social regulation that cannot control the consequences of its operation cannot by any standard be considered a reasonable or reliable form of regulation.

Modern science has become the privileged form of knowledge-as-regulation in spite of the fact that, as I have shown, social regulation cautioned by it is neither reliable nor sustainable. On the other hand, modern science has totally deserted the other possibility of knowledge inscribed on the paradigm of modernity: knowledge-as-emancipation. Mainstream economics is also in this case the extreme version of a syndrome that involves modern science as a whole. The solution that mainstream economics has given to the problems confronting the limits of representation converged, as we saw above, on a view of social reality fit to be regulated by a type of order close to colonialism, that is, a type of order that transforms the other into a manipulable and fungible object. This is, as I have suggested, the degree zero, the point of ignorance of knowledge-as-emancipation. In this form of knowledge, as we know, the point of knowing is solidarity, the recognition of the other as an equal and an equal producer of knowledge. The form of regulation that has come to prevail makes solidarity unthinkable, unnecessary or even dangerous. After all, docile bodies don't need solidarity and strangers don't deserve it. *Horror vaccui* has been operative in this regard also: if there are no other types of relevant agents, solidarity, rather than being a missing link, has no place in scientific discourse.

In a period of self-reflexivity, one may ask if the insight into the epistemology of blindness is not in itself a blind insight. Not necessarily. On the other hand, one has to admit that that might indeed be the case. The potential for an epistemology of seeing lies in the above-mentioned tension, intrinsic to modernity, between knowledge-as-regulation and knowledge-as-emancipation. The latter, as I said, has been totally marginalized by modern science but has not vanished as a virtual alternative. In fact, its presence as absence is what makes possible the epistemology of blindness.

An epistemology of seeing is one that inquires into the validity of a form of knowledge whose point of ignorance is colonialism and whose point of knowing

is solidarity. While in the hegemonic form of knowledge we know by creating order, the epistemology of seeing poses the question of whether it is possible to know by creating solidarity. Solidarity as a form of knowledge is the recognition of the other both as an equal whenever difference makes her or him inferior and as different whenever equality jeopardizes his or her identity. Having been over-socialized by a form of knowledge that knows by creating order in nature as well as in society, we cannot easily practice or even imagine a form of knowledge that knows by creating solidarity both in nature and in society. To overcome the difficulties I propose, as a prolegomena to this new form of knowledge, three epistemological demarches: the epistemology of absent knowledges; the epistemology of absent agents; revisiting representation and its limits.

The Epistemology of Absent Knowledges

While analyzing the limits of interpretation and evaluation in modern science above, I stressed that the sociology of absences is a crucial demarche to identifying the blinders that limit interpretation and evaluation. However, such sociology is not possible if not grounded on an epistemology of absences. In order to identify what is missing and why it is missing, we must rely on a form of knowledge that does not reduce reality to what exists. I mean a form of knowledge that aspires to an expanded conception of realism that includes suppressed, silenced or marginalized realities, as well as emergent and imagined realities. Once again, in a self-reflexive turn, we may ask if the knowledge that identifies the absences is not the same that legitimated the conditions that suppressed the possibility of alternative realities now being identified as absences. My answer is twofold. First, we will not know it until the consequences of this knowledge are evaluated in terms of the solidarity capital they are able to create. Second, there will be always absences that will not be noted. These constitute the void which, rather than being stigmatized by our *horror vacui*, should be contemplated by our *captatio benevolentiae*.

The epistemology of absent knowledges starts from the premise that social practices are knowledge practices. The non-science-based practices, rather than being ignorant practices, are practices of alternative, rival knowledges. There is no a priori reason to favor one form of knowledge against another. Moreover, none of them in isolation can guarantee the emergence and flourishing of solidarity. The objective will be rather the formation of constellations of knowledges geared to create surplus solidarity. This we may call a new common sense.

Modern science built itself against common sense, which it deemed superficial, illusory and false. Common sense was the name given to all forms of knowledge that did not meet the epistemological criteria that modern science established for itself. The distinction between science and common sense was made possible by what I call the first epistemological break. It distinguishes between two forms of knowledge: truthful knowledge and false knowledge. However opposed, these two epistemic entities entail each other, since one does not exist without the other. They are indeed part of the same cultural

constellation that in our time gives signs of closure and exhaustion. In sum, common sense is as modern as modern science itself. The distinction between science and common sense is thus made both by science and by common sense, but it has different meanings in each case. When made by science, it signifies the distinction between objective knowledge and mere opinion or prejudice. When made by common sense, it signifies the distinction between an incomprehensible and prodigious knowledge and an obvious and obviously useful knowledge. It is then far from being a symmetrical distinction. Besides, when made from the point of view of science, the distinction has a power that is excessive in relation to the knowledge that makes it possible. Like all specialized and institutionalized knowledge, science has the power to define situations beyond what it knows about them. That is why science can impose, as an absence of prejudice, the prejudice of pretending to have no prejudices.

I propose the concept of a *double epistemological break* as a way out of this stalemate. By the *double epistemological break* I mean that, once the first epistemological break is accomplished (thus allowing modern science to distinguish itself from common sense), there is another important epistemological act to perform, and that is to break with the first epistemological break so as to transform scientific knowledge into a new common sense. In other words, the new constellation of knowledges must break with the mystified and mystifying conservative common sense, not in order to create a separate, isolated form of superior knowledge, but rather to transform itself into a new emancipatory common sense. Knowledge-as-emancipation ought to become an emancipatory common sense itself: beyond the conservative prejudice and the incomprehensible prodigy, I propose a prudent knowledge for a decent life. The epistemology of absent knowledges tries to rehabilitate common sense, for it recognizes in this form of knowledge some capacity to enrich our relationship with the world. Commonsense knowledge, it is true, tends to be a mystified and mystifying knowledge but, in spite of that, and in spite of its conservative quality, it does have a Utopian and liberating dimension that may be enhanced by its dialogue with modern science. This Utopian, liberating quality may be seen to flourish in many different characteristics of our common-sense knowledge.

Common sense collapses cause and intention; it rests on a worldview based on action and on the principle of individual creativity and responsibility. Common sense is practical and pragmatic. It reproduces knowledge drawn from the life trajectories and experiences of a given social group, and asserts that this link to group experience renders it reliable and reassuring. Common sense is self-evident and transparent. It mistrusts the opacity of technological objectives and the esoteric nature of knowledge, arguing for the principle of equal access to discourse, to cognitive and linguistic competence. Common sense is superficial, because it disdains structures that cannot be consciously apprehended, but, for the same reason, it is expert at capturing the horizontal complexity of conscious relations, both among people and between people and things. Common sense knowledge is nondisciplinary and nonmethodical. It is not the product of a practice expressly devised to create it; it reproduces itself spontaneously in the daily

happenings of life. Common sense favors actions that do not provoke significant ruptures in reality. Common sense is rhetorical and metaphorical; it does not teach, it persuades or convinces. Finally, common sense, in Dewey's words, fuses use with enjoyment, the emotional with the intellectual and the practical.

These characteristics of common sense hold the virtue of foreknowledge. Left to itself, common sense is conservative. However, once transformed by knowledge-as-emancipation, it may be the source of a new rationality — a rationality comprised of multiple rationalities. For this configuration of knowledge to occur, it is necessary to duplicate the epistemological break. In modern science, the epistemological break symbolizes the qualitative leap from common-sense knowledge to scientific knowledge; in knowledge-as-emancipation, the most important leap is that from scientific knowledge to common-sense knowledge. Modern science taught us how to depart from existing conservative common sense. This is inherently positive but insufficient. Knowledge-as-emancipation will teach us how to build up a new, emancipatory, common sense by becoming a common sense. Only thus will it be a clear knowledge that fulfills Wittgenstein's dictum: 'whatever allows itself to be said, allows itself to be said clearly' (1973: Section 4.116). Only thus will it be transparent science that does justice to Nietzsche's desire that 'all commerce among men aims at letting each one read upon the others soul, common language being the sound expression of that common soul' (1971: 99). By becoming common sense, knowledge-as-emancipation does not shun the knowledge that produces technology, but does believe that as knowledge must translate into self-knowledge, so technological development must translate into life-wisdom. Wisdom points out the markers of prudence to our scientific adventure, prudence being the acknowledgment and control of insecurity. Just as Descartes, at the threshold of modern science, acknowledged doubt rather than suffered it, we too, at the threshold of the new constellation of knowledges, should acknowledge insecurity rather than suffer it.

The emancipatory common sense is a discriminating common sense (or unequally common, if you like), constructed so as to be appropriated in a privileged way by the oppressed, marginalized or excluded social groups, and actually strengthened by their emancipatory practice. This leads me to the second demarche toward an epistemology of seeing.

The Epistemology of the Absent Agents

As we saw above, mainstream social sciences and specially mainstream economics have reduced the variety and wealth of social agency to two types of individuals — docile bodies and strangers — neither of which is fit to sustain a social practice based on knowledge-as-emancipation. The monopoly of subjectivity that they have conquered explains why at the beginning of the twenty-first century the crisis of social regulation, rather than prompting the opportunity for a new surge of emancipatory ideas, forces and energies, feeds on the symmetrical crisis of social emancipation. Thus, social regulation does not have to be effective in order

to flourish; it flourishes simply because subjectivity is unable both to know and to desire how to know and to desire beyond regulation.

As a result, the invention of a new emancipatory common sense based on a constellation of knowledges oriented towards solidarity must be complemented by the invention of individual and collective subjectivities capable of basing their social practice on that constellation of knowledges. Otherwise, no matter how neatly elaborated, emancipatory knowledges will turn gradually and insidiously, like Escher's drawings, into regulatory knowledges.

The epistemology of absent agents is thus a quest for destabilizing subjectivities, subjectivities that rebel against conformist, routinized, repetitive social practices and are energized by experimenting with liminality, that is, with eccentric or marginal forms of sociability. Against a political economy of representation that proliferates residues, the epistemology of seeing proliferates emergent qualities grounded in different knowledge practices and lets them compete in the social fields, thus converting them into fields of social experimentation. The epistemology of blindness has promoted a construction of social practice based on the distinction between structure and agency. The apparent equality between the two terms of the distinction has been used to transform structure into a more or less iron-cage determination of agency. The result is the mediocrity of either docile bodies or strangers. The epistemology of seeing, on the contrary, will promote a construction of social practice based on the distinction between conformist action and rebellious action with an explicit preference for the latter.⁹

The decentering of conformism and thus of docile bodies through rebellious action must be complemented by the decentering of indifference and the strangers it breeds. Though this may be controversial because it evokes Carl Schmitt's political theory, I think that against indifference, which is the hallmark of political liberalism, it is necessary to revive the dichotomy friend—foe. Probably the most dilemmatic difficulty confronting critical theory today lies in the blurring of the distinction between friend and enemy. Critical theory has always presupposed a question — which side are we on? — and the answer to it. It is not surprising that assorted kinds of neo-positivists have managed to delegitimize this question by trashing the normative claims that underlie it. More surprising, however, is the condition of those, mostly among the youngest generation of social scientists, who, though they would like to answer the question and take sides, see, sometimes with anguish, the seemingly increasing difficulty in identifying alternative positions in relation to which it would be imperative to take sides. This difficulty can be sociologically explained by the increasing opacity of the enemy. Without enemies there is no need for friends. If there are no friends there is no purpose in exercising solidarity. At its deepest roots, the crisis of the Welfare State lies much less on a largely manipulated fiscal crisis, than on the ideological inculcation of the vanishing friends and their replacement by a sea of strangers, at best indifferent, at worst potentially dangerous.

There is nothing authoritarian or anti-democratic in the dichotomy of friends and enemies, as long as the dichotomy is established by nonauthoritarian democratic means.

Revisiting the Limits of Representation

The limits of representation, which, as we saw, are particularly drastic in mainstream economics, derive their credibility from the scientific actions they make possible. As the epistemology of absences confronts these actions with their human consequences by appealing to alternative knowledges and agencies that might generate other actions and produce alternative consequences, the limits of representation of mainstream science lose their monopoly of representation and are forced into a discursive competition with other knowledges and alternative forms of representation. Whenever this competition breaks out, the convincing power of the arguments cannot be derived from logical principles but rather from pragmatic considerations, from the 'last things' called for by W. James, that is, from the human consequences of alternative courses of action. Such competition, however, is not a competition about consequences. It is rather a competition about the linkages between consequences and the political economy of analytical procedures that may sustain them in real life. In this paper I refer to the analytical procedures themselves, but I am aware that their viability and credibility lie on the political economy of their linkages with consequences in social life.

The epistemology of absence, both of absent knowledges and absent agents, enables us to revisit the limits of representation in mainstream social sciences: the limits of the representation of relevance, identification, duration, and interpretation/evaluation. Seen from the perspective of the constellation of emancipatory knowledges propounded here, they lose their dilematic nature. I will limit myself to indicate, in a brief note, some of the possible ways they can be overcome.

Concerning the limits of relevance, I propose two demarches: the *transscale* and the *curious perspective*. Since different knowledges privilege different scales of phenomena, the constellation of knowledges I am proposing here suggests that we learn how to translate among different scales. The limits of a representation on a given scale become more visible when we compare that representation with a representation on a different scale. Transcaling is thus a demarche that permits us to contrast limits of representation with the purpose of elucidating what is at stake in the choice among alternative criteria of relevance.

Transcaling presupposes a certain unlearning of current criteria of relevance determination. It invites us to consult social reality through different cognitive maps operating at different scales. The learning process consists in raising the consciousness of the limits — contrasting representation with orientation, position with movement — without getting paralyzed. A higher consciousness of limits is at the core of the kind of prudent knowledge I am proposing here, a form of knowledge that teaches us how to keep consequences under the control and within the sight of the actions that cause them.

Curious perspective is the search for a different angle from which the proportions and hierarchies established by normal perspective are destabilized, and their claim of a natural, orderly and faithful representation of reality accordingly subverted. In the seventeenth century, the artists and art teachers began to

criticize Alberti's proper perspective for being fully manifest and comprehensible. They then began to explore 'how rules of perspective can magnify or diminish, multiply or distort the image' (Gilman, 1978: 34). Their idea was that the illusion of reality was something not to take too seriously, rather to take as play and to play with. According to Gilman, 'the world implied in the writings of later perspectivists is shifting, multifaceted, and ambiguous' (1978: 34).

In my view, this curious perspective, both playful and unsettling, must be brought in in the determination of degrees of scientific relevance. The criteria of relevance based on a mathematical rigidly established perspective tend to be reified by the recurrent and unproblematic use. Reification means, in this context, the conversion of the illusion of reality into a compressed, faithful reproduction of reality. On the contrary, the curious perspective reconstitutes the creative processes at the core of modern sciences, a production of illusions that rather than imitating society reinvent it.

Concerning the limits of identification, the epistemology of seeing invites us to shift our priorities: from an excessive focus on what we already know too well - that is, methods-based detection — to a focus on what we know less and indeed are knowing less and less, that is theory-based recognition. Since this discrepancy is exclusive of modern science, the recourse to alternative knowledges will unsettle the resolution levels to which we are used. It is necessary to raise our demands to an ever finer-grain resolution only possible in the context of constellations of knowledges. Another procedure to aim at is *multi-contrasted resolution*.

In remote sensing photography resolution is highly dependent upon target contrast. A high-contrast target is one in which there is a large density difference between bright and dark areas' (Avery and Berlin, 1992: 37). The improvement of resolution level with which we analyze society may require the invention of highly contrasted social practices, even when the surface of such practices, as the earth in itself, is deceptively low contrast. The generation of high-contrast and of multi-contrasted resolution is made possible by the transcaling and curious perspectives which are characteristic of cognitive processes inside constellations of knowledges.

Concerning the limits of the representation of duration, the procedures already indicated will help to see that social reality is a more or less sedimented terrain, a geological construct made of different regulations composing different layers, all of them in force together but never in a uniform fashion, all of them in the same moment but always as a momentary convergence of different temporal projections. Koselleck's conception of 'the contemporaneity of the noncontemporaneous' (1985), which is derived from Heidegger and Gadamer, may be useful to capture the complexity and unevenness of social, political, legal, or epistemological copresence. In the context of a constellation of knowledges, the analytical potential of this conception is maximized, because it is made self-reflexive, complex, uneven, and open to sociological variation itself. Although, in general, all social sciences bring together in a given time-space different temporalities and spatialities, some social sciences - which we may call performative - emphasize the contemporaneity, that is to say, the uniqueness of the encounter,

while others — which we may call self-reflexive — emphasize the noncontemporaneous roots of what is brought together. Of all social sciences, mainstream economics is the most performative. It reproduces the forms of power and knowledge that best suit its horizons of expectations. Whatever is brought into the analytical field (issue, social groups, cognitive maps, normative orderings) is somehow pulled by the roots, so as to become coeval with whatever else is brought together into analysis. The momentary and pragmatic suspension of noncontemporaneity apparently favors the elimination of hierarchies among social temporalities, thereby enhancing the possibility of one temporality absorbing other competing temporalities.

Like transcale, curious perspective, and multi-contrasted resolution, *intertemporality*, made visible by the contemporaneity of the noncontemporaneous, turns the question of duration into one of the most complex ones. Probably for this reason it is the question that mainstream economics has most caricatured through the kind of the compression of time and the flattening out of sequences in which it excels.

Finally, concerning the limits of interpretation and evaluation, the epistemology of both absent knowledges and absent agents provides the key to transcend the limits by raising the consciousness of their number and resilience. The richer the parameters that define authorship, intelligibility, and purposefulness, the greater the need to submit narrowly defined technological applications of knowledge to political and ethical contestations. In the process we will move from a paradigm of technical application of science to a paradigm of edifying application of prudent knowledges, knowledges that transform research objects into solidary subjects and urge knowledge-based actions to navigate prudently within the sight of consequences.

Enlightened by both the epistemology of blindness and the epistemology of seeing, it is possible to envisage the emergence of a prudent knowledge for a decent life, a knowledge which, by knowing from colonialism to solidarity, recognizes the order that bounds experiences and expectations, actions and consequences, except when order is itself a form of colonialism. The ultimate aspiration is all too human, an aspiration which I call *advanced normality*: the aspiration to live in normal times whose normality does not derive from the naturalization of abnormality.

Notes

A first version of this paper was presented at the Conference of the European Association for Evolutionary Political Economy, Lisbon, 5—8 November, 1998. This paper has greatly benefited from my dialogues with archeologist-anthropologist Paula Meneses. The library assistance of Mike Morgalla was precious as ever. Maria Irene Ramalho provided invaluable editorial comments.

I dedicate this paper to Immanuel Wallerstein.

- 1 A detailed analysis of these cartographic mechanisms can be read in Santos (1995: 456-73).
- 2 On the roles and limits of maps see, among others, Monmonier (1991, 1993), Campbell (1993), MacEachren (1994).
- 3 According to Monmonier, 'Perhaps the most enigmatic problem in cartography is the generalization to a much smaller scale of thematic data, such as land use, mapped at a larger scale' (1985: 111).
- 4 John Ruskin (n.d.: 328): 'perspective can, therefore, only be quite right by being calculated for one fixed position of the eye of the observer; nor will it ever appear *deceptively* right unless seen precisely from the point it is calculated for'.
- 5 On the use of remote sensing in cartography see Monmonier (1985: 89-100). As happens with scale and perspective the determination of the type and level of resolution is both a technical and a political problem. Concerning the latter and just as an example, high resolution remote sensing systems can collect sensitive environmental data that polluters would prefer be kept from an alert and apprehensive public (Monmonier, 1985: 185).
- 6 On this topic see Deagan (1989).
- 7 On the problem raised by the Rapid Rural Appraisals, see Chambers (1992), Richards (1995), and Sapsford and Singer (1998).
- 8 For a recent treatment of these methodological issues see Meneses (2000).
- 9 As conceived here rebellious action is action-with-clinamen. In Democritus and Epicurus clinamen is the capacity of the atoms to swerve or deviate from predetermined trajectories, thus invalidating deterministic conceptions of reality. On the concept of action-with-clinamen, see Santos (1998).

References

- Andrews, L. (1995) *Story and Space in Renaissance Art: The Rebirth of Continuous Narrative*. Cambridge: Cambridge University Press.
- Avery, T.A. and Berlin, G.L. (1992) *Fundamentals of Remote Sensing and Airphoto Interpretation*. New York: Macmillan.
- Bachelard, Gaston (1972) *La formation de l'esprit scientifique*. Paris: J. Vrin.
- Binford, L.R. (1981) 'Behavioral Archaeology and the "Pompeii premise"', *Journal of Anthropological Research* 37(3): 195-208.
- Borges, Jorge Luis (1974) *Obras completas*. Buenos Aires: Emecé.
- Bowles, Samuel (1998) 'Endogenous Preferences: The Cultural Consequences of Markets and other Economic Institutions', *Journal of Economic Literature* XXXVI: 75-111.
- Campbell, John (1993) *Map Use and Analysis*, 2nd edn. Dubuque, LA: Brown Publishers.
- Chambers, R. (1992) 'Rural Appraisal: Rapid, Relaxed and Participatory', *IDS Discussion Papers* 311: 1-90.
- Deagan, Kathleen (1989) 'Tracing the Waste Makers', *Archeology* 42(1): 56-61.
- Dunnell, Robert (1989) 'Hope for an Endangered Science', *Archeology* 42(1): 63-6.
- ERDAS (1997) *ERDAS Field Guide*. Atlanta: Erdas International.
- Gamble, C. (1989) *The Paleolithic Settlement of Europe*. Cambridge: Cambridge University Press.
- Gilman, E.B. (1978) *The Curious Perspective: Literary and Pictorial Wit in the Seventeenth Century*. New York: Yale University Press.

- Keates, J.S. (1982) *Understanding Maps*. London: Longman.
- Koselleck, Reinhart (1985) *Futures Past: On the Semantics of Historical Time*. Cambridge, MA: MIT Press.
- Lapouge, M.G. (1897) 'The Fundamental Laws of Anthropo-sociology', *Journal of Political Economy*. MacEachren, Alan (1994) *Some Truth with Maps: a Primer on Symbolization and Design*. Washington, DC: Association of American Geographers.
- Meneses, Maria Paula G. (2000) 'New Methodological Approaches to the Study of the Acheulean From Southern Mozambique', doctoral dissertation, Rutgers University.
- Monmonier, Mark (1981) *Maps: Distortion and Meaning*. Washington, DC: Association of American Geographers. - (1985) *Technological Transition in Cartography*. Madison, WI: The University of Wisconsin Press.
- (1991) *How to Lie with Maps*. Chicago: Chicago University Press.
- (1993) *Mapping It Out: Expository Cartography for the Humanities and Social Sciences*. Chicago: Chicago University Press.
- Muehrcke, P.C. (1986) *Map Use*, 2nd edn. Madison, WI: JP Publications.
- Nietzsche, Friedrich (1971) 'Rhétorique et langage', *Poétique II*, 5: 99-144.
- Racine, J.B. et al. (1982) 'Escala e acção. Contribuições para uma interpretação do mecanismo de escala na pratica da Geografia', *Revista Brasileira de Geografia*, 45.
- Richards, P. (1995) 'Participatory Rural Appraisal: A Quick and Dirty Critique', *PLA Notes* 24: 13-16.
- Rifkin, Jeremy (1987) *Time Wars: The Primary Conflict in Human History*. New York: Simon & Schuster.
- Ruskin, John (n.d.) *St. Mark's Rest. Lectures on Art, Opening the Crystal Palace, Elements of Perspective*. New York.
- Santos, Boaventura de Sousa (1995) *Toward a New Common Sense: Law, Science, and Politics in the Paradigmatic Transition*. New York: Routledge.
- (1998) 'The Fall of the Angelus Novus: Beyond the Modern Game of Roots and Options', *Current Sociology* 46(2): 81-118.
- Sapsford, D. and Singer, H. (1998) 'The IMF, the World Bank and Commodity Prices: A Case of Shifting Sands?', *World Development* 26(9): 1653-60.
- Sharer, R.J. and Ashmore, W. (1987) *Archaeology: Discovering our Past*. Palo Alto: Mayfield Publishing.
- Stone, G.D. (1981) 'The Interpretation of Negative Evidence in Archaeology', *Atlatl* (University of Arizona, Department of Anthropology), *Occasional Papers* 2: 41-53.
- Veblen, T. (1898) 'Why is Economics Not an Evolutionary Science?' *The Quarterly Journal of Economics* 12: 56—81.
- Wittgenstein, L. (1973) *Tractatus Logico-Philosophicus*. Frankfurt: Suhrkamp.

■ **Boaventura de Sousa Santos** is Professor of Sociology at the University of Coimbra and Visiting Professor of the University of Wisconsin-Madison. His research interests are in political sociology, sociology of law and epistemology. At present he is involved in research projects in Portugal, Brazil, Colombia, India, South Africa and Mozambique. His most recent books are *Pela Mão de Alice: O Social e o Político na Pós-Modernidade*, Afrontamento, 1994 (currently in its 7th edition; also published in Spanish); *Toward a New Common Sense: Law, Science and Politics in the Paradigmatic Transition*, Routledge, 1995; *La globalización del*

derecho: los nuevos caminos de la regulación y la emancipación, ILSA, Ediciones Universidad Nacional de Colombia, 1998; *Reinventar a Democracia*, Gradiva, 1998 (also published in Spanish); *Globalizing Institutions: Case Studies in Regulation and Innovation* (co-editor), Ashgate, 2000; *A Crítica da Razão Indolente: Contra o Desperdício da Experiência*, Afrontamento, 2000. Address: Centro de Estudos Sociais, Colégio de S. Jerónimo, Apartado 3087, 3001-401 Coimbra, Portugal. [email: bsantos@sonata.fe.uc.pt]