

METAPHOR IN SOCIAL SCIENCE¹

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ABSTRACT: It is widely acknowledged that scientific discourse is full of metaphors. Does this undermine the commitment of such a discourse to truth and objective knowledge? Does this mean that the scientist (any scientist) is, after all, only a 'rhetorician in disguise'?²

In what follows I will try to argue for quite the opposite view. I will show that metaphor is not simply a rhetorical device -at least, in the derogatory sense of rhetoric³. There are metaphors which can be used to increment our knowledge, and to explore new conceptual domains. This appears to be the case not only for natural science, but also for the so-called 'sciences of the social'.

Keywords: scientific discourse, rhetoric, metaphor, truth, interpretative anthropology, text, interpretation, reason, quantum society, principle of complementary.

1. Preliminary Definitions

The debate about metaphor, its different functions and uses, is complex and very controversial. By way of introduction, a few points should be selected from that debate and emphasized, in order to set some boundaries for the argument to follow.

Firstly, the obvious question: what do we mean by 'metaphor'? A useful way to think about metaphor is to question *how? where? why?* do we use it.

To the question 'how?' (how does it function) we can answer by saying that with metaphors a mechanism of *conceptual displacement* is at work.⁴ In the literature, displacement has taken various forms: Aristotle talked of 'epiphora' (literally: transport)⁵, I.A.Richards of the 'interanimation' of two thoughts active together within the same word⁶, and Max Black used the word 'interaction' (between two words and their associated domains of connotations and commonplaces, as in the widely quoted phrase 'Man is a wolf', where both man and wolf are seen differently when interacting metaphorically). Sometimes, we displace a term to name a referent for which we do not have an appropriate terminology (eg. the leg of the table). These are cases of 'cathacresis' (literally: misuse, or abuse of words).⁷

As to the question 'where?', it should be emphasized that metaphor is a phenomenon of *discourse*. We do not find metaphors in the dictionary (with the exception, perhaps, of 'frozen' metaphors). Metaphors are discursive 'acts': they generate certain meanings when they are *used by someone* in view of some descriptive goal, and they promote a *process of change* within a discourse, in order to satisfy that goal.

Metaphors are used, and can be found in different kinds of discourses, everyday, literary, poetic, *and* scientific. They are also used in accounts about those discourses (eg, not only in science, but also in the philosophy of science). Which brings us to our third question: 'Why?'. Why do we use metaphors? We use metaphors for two main sets of reasons. On one side, there are 'cosmetic' reasons: we use metaphors for 'saying-it-better' -more elegantly, more impressively or persuasively, more pictorially. On the other side, there are 'cognitive' reasons: we use metaphors in order to 'say more', or to increment our knowledge (to talk of a 'sharp wind' preceeding a storm conveys more information and alters the extension of the term 'wind'). Sometimes, even more radically, we use metaphors simply in order 'to say it' -that is, in order to express a thought previously unknown, or to 'shape' an object previously uncategorized, or unnoticed.

It is the second set of reasons ('cognitive' reasons) which proves most interesting in view of the argument of this paper. If metaphors can be used for cognitive purposes, then metaphors can be used in science (arguably any science). The first step is then to establish how the mechanism of displacement works when it is called upon to serve cognitive reasons in the discourse of science.

In the natural sciences metaphors are often associated with models. This association highlights two features that both metaphorical displacements and modelling have in common: a 'systematic' function, and an 'interpretative' function. Once these two functions are explained, then it will be possible to argue that these two functions are also displayed by social scientific metaphors.

As to the first, a metaphor is not simply a word, an expression, or even a statement. A metaphor gives rise to, and prefigures (suggests) a whole universe (network) of associations and references, which it projects onto a semantic field. Metaphors possess a systematic and 'interconnecting' power, which extends them beyond the single word or statement.

N. Goodman offers a useful description of this function. According to him, a metaphor is not a pin-point event of speech -or better, it might indeed be pin-pointed, but when we refer to 'the metaphor', we embrace (look upon) the whole (actual/potential) 'area' of experience or of facts covered by that single metaphor. For Goodman, words ('labels') are embedded in *schemas*, or systems of concepts and concepts-terms. Schemas organize a *realm* of objects and their ranges of extension. Metaphor allows a schema to shift into a new realm, and by so doing it governs a new *region* of facts.⁸

As to the second function, I said before that by means of displacement we are able to describe something in terms of something else (a displacement is a 'seeing through', or a 'seeing as'). The reason why we displace concepts is twofold: sometimes it is in order to add another description (we re-describe something, already described in some way, as being some other thing); on other occasions, by means of displacement, we put forward a description for the first time, and by so doing we envisage a new referent (seeing 'something' as something). In both cases, metaphors can be said to be *interpretative*: by generating new possibilities of meaning, they make objects 'visible' in a new way, or they make new objects 'visible'.

I intend to argue that metaphors in the social sciences perform these two functions. This is, then, how I will proceed. Firstly, by using an example from

interpretative anthropology, I will show how the systematic and the interpretative functions of metaphors suit the domain of the social sciences. This will amount to saying that metaphors in social science can provide *interpretations* of social events (i.e., they make social events meaningful).

Secondly, I will raise some questions for evaluating the metaphors adopted and exploited by social science. When can we say that a social metaphor is good? How can we assess that a metaphor provides a 'good interpretation'? Is the assessment of 'goodness' a comparative process, i.e. can we compare the relative merits of different metaphors, against a background of similar research programmes? This will lead me towards suggesting a contextual answer: metaphors are 'good' (or bad) vis a vis the way in which they make certain objects visible, within the boundaries set by a specific research programme. It is not, then, that with metaphors 'anything goes', but rather that metaphors are adopted within certain contextual constraints.

Thirdly, and finally, I will explore the possible content of these constraints, that is the 'reasons' for the adoption of certain metaphors in social enquiry⁹.

2. An example of a social scientific metaphor

How can social occurrences be 'accounted for'? How can 'objects' of social enquiry be envisaged? To answer these questions, we are immediately driven towards using metaphors. An example from anthropology shows this to be the case.

2.1. Anthropological 'texts'

Alien habits, behaviour, attitudes, rituals, etc. are not simply data to be observed, or facts to be reported. With a view to criticize positivistic anthropology, the so-called interpretivist anthropologists argue that anthropological objects are complex discursive practices, or symbolic actions, which means that they need to be understood in terms of their meanings. It is in order to express the nature of these objects, and to offer a way to bring their identity to light, that some interpretivist anthropologists use the *metaphor of text*. We can see how this metaphor works and develops (according to the two features which have been set out above) by referring to the works of one of the founding fathers of interpretivist anthropology: Clifford Geertz.

The ethnographer, Geertz claims, is continually confronted by a multiplicity of complex conceptual structures, by stratified meaningful behaviours, knotted into each other. These appear at first sight to be strange, irregular, inexplicit, and open to a variety of possible interpretations. How can the ethnographer understand human behaviour, that is how can he/she figure out what kinds of symbolic action it signifies?

This task of understanding can be achieved by adopting an interpretative attitude, which, in Geertz's view, amounts to the following instruction: look at the anthropological situation 'as if it were a *text*'.¹⁰ The ethnographer's goal is to construct a reading of what happens, and by so doing to rescue events from the perishing occasions of their occurrence. Events are preserved in accounts, which 'thickly' describe their symbolic nature.¹¹

In order to achieve this understanding, the anthropologist does not have to become a native. Instead, the anthropologist should try *to converse* with the natives, in a way similar to that which occurs between an author and his reader: the latter brings to

light the author's meanings, within a sort of ideal dialogical situation. So, the metaphor of the text evokes the idea of a *dialogue*, which is itself used metaphorically. In fact, it does not refer to an actual conversation in the field.

In Geertz's idea of a dialogue, the anthropologist must use the *meanings of his own culture* to reconstruct the way in which people belonging to a different culture *make sense of and to themselves*. So the anthropologist's meanings function like a *tool* by means of which the understanding of the meanings of a foreign culture becomes possible (eg., Balinese cockfights as a dramatization of social status¹²).

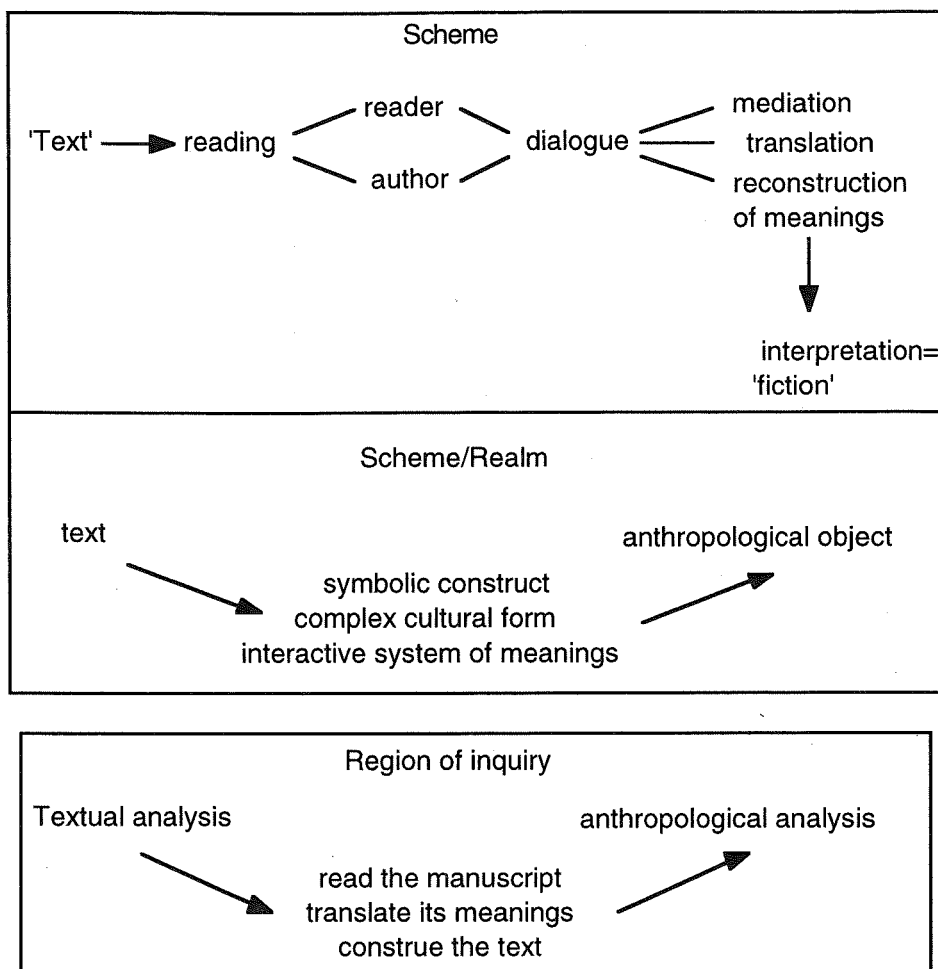
There is a 'distance', then, between the anthropologist and the culture of the other, which the anthropologist 'bridges' by means of his own social meanings. The bridge is built up by means of 'translating' the meanings of another culture into the anthropologist's system. And the procedure adopted here, Geertz writes¹³, is more similar to the work a critic does to illuminate a poem than to what an astronomer does to account for a star.

The anthropologist's work is an "understanding of understanding", and the methodological premise of his/her work consists of "an attempt to understand how it is that we understand understandings not our own"¹⁴. In other words, it is a work of 'mediation', of 'translation', and of 'construction' of meanings: precisely those processes required for the interpretation of a text.¹⁵

As a consequence, anthropological writings cannot be factual reports, or 'thin' descriptions. The anthropologist, like a literary critic, or an artist, in writing about a set of social behaviours and practices presents them as being a coherent construction. The construction is not there, ready to be observed. It requires the invention of a form, an order, a framework of sense: a *text* (or a narrative). Anthropological accounts are then 'fictions', but not in the sense of being false, or unfactual. By appealing to the Latin sense of 'fictio', Geertz claims that they are 'something made', 'fashioned': they are constructions.¹⁶

2.2. The metaphorical functions of anthropological 'texts'

What does the metaphor of text allow us to do? First of all, it displays its systematic power. It organizes a 'scheme' of connotations ('text') to be projected onto a 'realm' of experience (foreign behaviour), and this makes this realm 'visible' (anthropological object). This picture is summarized in Table 1 below.



As Table 1 shows, one of the consequences of the systematizing power of the metaphor is that certain traits for the identification of anthropological objects are selected and emphasized. So, the scheme -projected metaphorically on the new realm- provides an interpretation of the object(s) of the new realm. It is by means of the metaphor that they 'make sense'. Moreover, by means of this interpretive 'scheme', the metaphor of text governs a 'region' of investigation (anthropological analysis), and sets out the conditions under which the investigation itself is to be pursued.

Firstly, the investigation cannot be *general*: the point of a textual analysis is not to codify abstract regularities, but to make thick descriptions possible. We do not begin with a set of observations and then try to generalize about them by means of some law. Instead, we start from a set of alleged meanings, and then we try to place them within an intelligible framework.

Secondly, the investigation is not *contemplative*: since textual analysis cannot rely on pure facts, its task is not purely descriptive. Rather, we look for a 'redescription', that is for a 'construction' which exhibits the meaning of what is observed, being aware that what we observe is not a brute fact but an interpreted experience.

Thirdly, the investigation is neither *predictive* nor *explanatory* in the positivistic sense. What it provides is a vocabulary in which (and by which) what a symbolic action has to say about itself can be expressed. It also provides a dictionary to assist the interpreter in the process of translation (as appears from the scheme above).

An obvious question to ask is whether 'text' is a *good* metaphor. More generally, how do we know that certain metaphors are good; or, how do we find out that, by means of them, we are providing a 'good interpretation'? Once again, an example taken from the social sciences will help my discussion. I will compare the metaphor of text with another, purportedly similar metaphor, used by a group of sociologists who claim to be 'ethnographers of everyday life' (more or less metaphorically). These sociologists are the ethnomethodologists, and the metaphor they use to account for daily actions is that of 'document'. The purpose of this comparison is to find out whether and how we can establish that one metaphor is preferable to the other. Does the metaphor of the document 'do a better job' than the metaphor of the text, in the account of social practices?

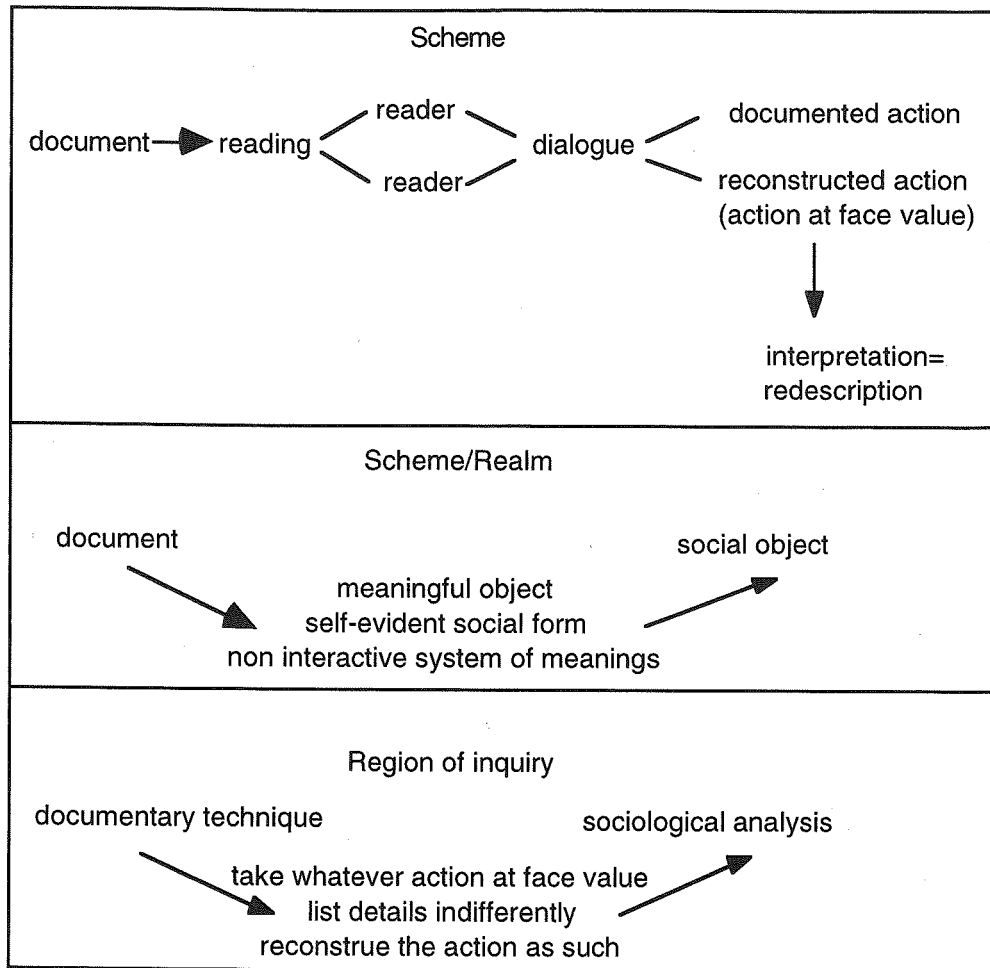
The comparison seems to be fair since the ethnomethodologists proclaim that the two research programmes of sociology and anthropology are similar. However, what the comparison will reveal is that the two metaphors do 'different jobs' precisely because the two social research programmes are rather different. Therefore, it would seem that judging the 'goodness' of a metaphor is a question to be assessed contextually, from within each research programme, and in view of the goals set by the programmes themselves.

3. Evaluating 'good' metaphors

The ethnomethodologists view social order as an actual accomplishment on the social actors' part. For them, the task of the social scientist is to account for the way in which actors themselves accomplish that order. The social scientist is said to 'indifferently describe' the ways in which actors view their actions. That is, actions are to be taken 'at face value'. The social scientist is indeed an 'interpreter' for the ethnomethodologist, but not in the sense of the 'textual' interpreter. A more suitable metaphor to represent the heart of this methodology is that of the 'document'.

To describe an action, the ethnomethodologist says, we need to build up some 'documentary evidence', that is to collate as many details as possible, or as many as the actors are able to perceive, and then extrapolate the stable features of the context within which the 'documented action' has occurred. This, in methodological terms, is called the 'documentary technique'. It consists of an essentially *symmetrical* strategy of investigation, in that the social scientist merely appears to elucidate what common sense cannot fully disclose.

Now, how does the 'document' differ from the 'text'? Table 2 illustrates what the metaphor of 'document' amounts to.



Here too, the metaphor in question is 'systematizing' and 'interpretative'. However, the point of a document is that it can be used to show or to prove something. In fact, the ethnomethodological idea of the documentary technique is to gather evidence of the actors' description of their actions, so that the sociologist's evidence and the actors' description of their actions are symmetrical.

With a text the situation is different: a text cannot be used to prove anything for the simple reason that the text is precisely what needs to be produced, or put together in the first place. It is the structure formed by the interactions of meanings and interpretations which constitute 'the text'; and this structure is not simply the 'documented action', that is the actors' interpretations per se. It is only when we acknowledge the 'difference' between our interpretations and the others' interpretations that the account 'takes off', so to speak. So, in some sense, it is *asymmetry*, rather than symmetry, which allows for the construction of a social text.

3.1. Texts and documents compared

So, is the 'text' better than the 'document' in assessing a good interpretation of social events? Can we compare the (relative) merits of the two metaphors? It seems

that a *prima facie* answer to these questions can only be given from one or the other point of view. That is, from an interpretivist anthropological point of view, we could argue that were we to take other people's actions and words 'at face value', as recommended by the ethnomethodologist, we would preclude the possibility of identifying any way of understanding those people. Any anthropologist knows from experience that the natives are not 'pure informants'. The informants are often uncooperative, or they do not respond in such a way that facilitates communication. Arguing from a different point of view, an ethnomethodologist would claim that 'seeing' a social practice through the lenses of another inescapably obfuscates our assessment. This cross evaluation would seem to lead to the conclusion that each metaphor is a partial interpretation: that is, both metaphors are 'good' in emphasizing certain aspects of their objects of study. More generally, it is arguable that different metaphors show different things, and that what we 'see' is a function of what we 'want to see' within a context of appraisal. In other words, given a certain context of inquiry, we might have 'reasons' to prefer one metaphor to the other.

Nonetheless, what about the objects themselves? How do we know that what we show of them is at least 'appropriate'? This problem appears particularly acute with metaphorical interpretations: by associating distant connotations, metaphors invent referents. Does this mean that 'any object goes'? That there is no constraint arising from actual practices, behaviours, actions, etc.?

Someone could argue that this order of questioning does not concern metaphors *per se*. Metaphors in science (any science) help us to imagine possible ways of visualizing objects, but they do so only *tentatively*. To provide justifications for the use of a metaphor, and also for the use of one metaphor rather than another, belongs to a different domain of reasoning, to a different 'logic'.

I am instead inclined to believe that a tentative object is not put forward blindly. Some kind of warrantability is part of the very process which brings a certain object 'in sight'. The fact that we look at, say, a ritual in terms of a text means that, although we might not have evidence that this will give us a good interpretation, we do, however, have some 'reasons' to believe that this interpretation is at least a promising one (i.e., it 'makes sense').

I introduced above the idea of the 'visibility' of an object as a condition for the legitimacy of an interpretation: interpretations are good as long as they make certain objects 'visible'. Such an idea might sound too vague, or unsatisfactory, to be used as a constraining condition. However, in the light of what I have just said, the same condition might be given a more precise and qualified status. It can be argued that there are 'reasons' behind the visibility of an object, which account for the *prima facie* acceptability of the interpretation offered.

Interpretations 'take off' within constraints. The interesting question becomes then that of spelling out what these 'reasons' are. Obviously, we cannot think of them in terms of 'criteria' of construction, of enabling conditions which are general, objectively justifiable, adequate, or prescriptive. These 'reasons' cannot be thought of as if they were methodological rules. I will suggest some of their features by means of yet another example.

4. Interpretations within reasons

In *The Quantum Society*, Zohar and Marshall¹⁷ argue that, just as the old science (mechanistic or Newtonian physics) provided a suitable framework to conceive of and represent natural and social realities back in the 16th and 17th centuries, the new science (relativity, quantum mechanics, chaos and complexity theory) offers a whole range of cognitive and descriptive tools which can be applied to today's experience. The old science, with its deterministic, atomistic, reductionistic view of the world, cannot be used with any success to represent the contemporary world, with its stress on indeterminacy, pluralism, unpredictable changes.

Driven by this general argument, Zohar and Marshall explore some of the opportunities offered by the new science in terms of providing a language which, if appropriately 'displaced', can express the world we live in, and make us rethink the traditional conceptualizations of our world in a new light.

In *The Quantum Society*, it is specifically claimed that quantum science is a repository of instructive *metaphors*. By looking at the way quantum 'things' exist, how they change, and how they relate, we can find modes of expression for some, often overlooked, or apparently contradictory, features of our own experience, and of the larger social context we live in¹⁸. It is quite interesting to recall the title that Zohar and Marshall give to the chapter where they discuss the basic elements of quantum mechanics: 'Learning to think the Impossible'.

For the purpose of my argument, I will limit myself to exploring the development of one specific metaphor, that is the 'quantum individual'. The analysis of this metaphor will facilitate the discovery of some of the 'reasons' which account for the plausibility of the metaphor itself.

4.1. Features of quantum worlds

In order to understand the scope and construction of the metaphor, let me briefly recall a few features of the quantum framework, and then see how they are displaced metaphorically into the social domain¹⁹.

Firstly, how do quantum things 'exist'? Against the Newtonian way of thinking, where things have a very definite position or identity, quantum reality presents itself in terms of a Principle of Complementarity. Light is both particle-like and wave-like *at the same time*. The two aspects complement each other, and both are necessary to give a description of what light is. However, we are condemned not to see this duality, we can only see one aspect at a time, according to the experiment designed (see for ex. the two-slit experiment). This means that quantum reality is not only 'uncertain', but also 'contextual': what we see is what we look for.²⁰

Secondly, how do quantum things 'change'? Against the Newtonian view of natural order, where things are determined, and because of that entirely predictable, in quantum reality indeterminacy and multiplicity affect the way any change or transformation occurs. An electron might at some point begin to move into different energy orbits (and this for no apparent reason). Each 'journey' is associated with a probability, but nothing is ever determined. Also, we are told, there is a sense in which we can say that the electron actually follows *all* the possible paths, all at the

same time. These are the so-called 'virtual transitions' (vis a vis the 'real transition', i.e. the actual journey of the electron).²¹ At the moment of observation, many-possibility quantum reality condenses into a single actuality. This is known as the 'collapse of the wave function', as illustrated by Schrodinger's 'cat'. The cat is both alive and dead when unobserved inside the box, and is either alive or dead only when we open the box and look inside.

Finally, what about interactions? Against the Newtonian atomistic view of ultimate reality, where everything is reducible to basic particles, separate from each other and only externally connected (atoms are impenetrable), the quantum world is holistic in a specific sense. When two objects (two quantum systems) meet, their particle-like aspects tend to stay separate and the particles keep their original identity. However, their wave-like aspects tend to merge, giving rise to a new system which enfolds the originals. This means that the two systems relate both externally and internally (they get 'inside' each other and evolve together).²²

How does the so-recalled quantum framework help in considering the problem of human identity? To use Max Black's words, the quantum framework allows us to 'talk in a certain way' about human identity. Zohar and Marshall proceed on two parallel strategic routes. On one side, they explore the metaphorical 'potentials' of the framework vis a vis the problem of human identity. On the other side, they spell out the speculative potentials of the discovered metaphors. Both routes reveal the kinds of 'reasons' by which the chosen interpretation is constrained.

4.2. Individuals and quanta

The first explorative inquiry does not simply amount to assessing similarities between the natural world (treated quantistically) and the social domain. The comparative procedure is more complex than this. It amounts to a displacement of quantum-concepts and relative concept-terms onto the social domain, and then follows up the behaviour of these concepts in the new domain. The procedure implies a mediation between the two domains, a translation of concepts, and a redescription, or reconstruction of a domain of experience under a new language. In short, the procedure is *interpretative*.

Zohar and Marshall use quantum-metaphors 'to establish' analogies between the two domains. It is via these metaphors that we come 'to see' the potentials of an analogy between quantum things and 'quantum individuals'. What are these 'potentials'? On one hand, by following the metaphor, particle-like individuals do not exclude wave-like individuals. Neither interpretation is primary, or more 'real'. Only surrounding circumstances evoke one, or the other, side of its constitutive duality. On the other hand, and even more crucially, given the special relation between particles and waves, some special 'emergent' properties will arise which participate of both particle and wave aspects, without being reducible to the original aspects themselves.

So, the first 'reason' in favour of the quantum-individual metaphor is that it offers a solution to a recurrent social philosophical problem: the never-ending dispute between individualism and collectivism (individuals, the metaphor tells us, are both 'particles', and 'waves'). More particularly, the problem of the linkage between micro

and macro worlds seems to find a plausible solution, if interpreted in the light of the suggested metaphor (the linkage is to be thought of in terms of 'complementarity').

A second 'reason' in favour of the metaphor is its fecundity. With the interpretation it offers, it is possible to address further questions which relate specifically to the social domain. For example, what conditions will favour more wave-like behaviour -social or family cohesion- or more particle-like behaviour -more independence? What social institutions give appropriate expression to both?

There is a third 'reason' offered in favour of the quantum-individual metaphor. This reason coincides with the second strategic route of the book, what Zohar and Marshall call the 'speculative' route. Quantum metaphors are not simply metaphors. Arguably, they can be taken *literally*.

The third reason offered appears rather powerful: it is an 'explanatory' reason. The fact that social events and correlations appear to be similar to quantum events and correlations might not just be a striking coincidence. It might be that the former *are*, literally, quantistic. Zohar and Marshall explore the possibility that our mind is a quantum system, or better, that the brain contains a quantum system which is responsible for all the potential of human consciousness. There are a number of studies, quoted in the book, which try to provide evidence for such a 'speculation' -though it is admitted that we are just at the beginning of this kind of investigation.

To assess whether this 'speculation' has some foundation or some credentials is not the task of this paper. However, it is among the tasks of the book to show that this speculation provides a strong 'reason' to believe in the quantum interpretation of the social world. Were this to be done, then the explanatory power of the quantum metaphor would appear to be a far stronger reason than the other two, which only suggest simple analogies between descriptions of events and relations.²³

However, I would be inclined to claim that the explanatory reason, in the way it has been put forward, is -despite its appeal- misleading, and to some extent unnecessary for the cognitive claims of social scientific metaphors.

5. Conclusions

In this paper, I have argued that, in social science, it is possible to detect metaphors possessing a systematizing and an interpretative function. These metaphors can be used for cognitive purposes. A cognitive use of metaphor in social science amounts to providing 'good' interpretations of social objects. A good interpretation is an interpretation which makes an object 'visible'. So that an object becomes visible, it is not that 'anything goes'. Reasons can be spelled out for the 'goodness' of a metaphorical interpretation.

In the light of this argument, a metaphor like the quantum-individual becomes acceptable not because it can be taken literally (i.e., because it points to a real individual), but rather because it offers a description of real individuals through which features and aspects of these individuals become intelligible (i.e., they 'make sense'). Metaphors in social science are interesting not because of their explanatory power (being 'the right' interpretation), but because they allow us to make certain social arrays intelligible (and it is in this sense that we can say, or we might find out, whether they are 'good' interpretations). Metaphors in social science are not elliptic

explanatory arguments, but interpretative tools by means of which some social understanding might follow.

Does this lead us to the conclusion that social metaphors cannot be 'speculative'? I believe that an interesting point arises from the way in which the metaphorical and the speculative levels of the quantum metaphor are related in *The Quantum Society*.

As I said earlier, metaphors allow us to bring together features of objects in such a way that new objects become 'visible'. Metaphors envisage possible referents: this is the sense in which we can say that the interpretations they provide can become 'speculative'. That is, they make us speculate about what we had not thought of before: like quantum physics, they teach us how 'to think of the impossible'.

Notes

- 1 The original version of this paper was presented at a seminar series on 'Topics in the Philosophy of the Social Sciences', at New College, Oxford, in May 1994. I am very grateful to all those who discussed this paper with me, and in particular to Liz Frazer, Gavin Williams, Rom Harré, and Ernan McMullin.
- 2 See, Simons, H.: 1980, 'Are Scientists Rhetoricians in Disguise?', in E.E. White (ed.): *Rhetoric in Transition*, Pennsylvania State University U.P., University Park.
- 3 See on this M. Pera-W. Shea: 1991, *Persuading Science. The Art of Scientific Rhetoric*, Watson Publ. Intern., Canton MA; and also my 'Rhetorical Aspects of Scientific Arguments', in R. Harré (ed.): *Reason and Rhetoric*, The Edwin Mellen Publ., Lewinston etc., 1993.
- 4 I take the description of this mechanism from Schön, D., *Displacement of Concepts* (Tavistock Publ., London, 1963). For him, a metaphorical displacement is a four-stage process: the 'transposition' of a concept into a new domain, and the reinterpretation, correction, and adaptation of the concept within this new domain.
- 5 "Metaphor consists in giving the thing a name that belongs to something else; the transference (*epiphora*) being either from genus to species, or from species to genus, or from species to species, or on ground of analogy". Aristotle, *Poetics*, 1475b, 6-9.
- 6 See, for example, the famous lines "A stubborn and unconquerable flame, creeps in his veins and drinks the stream of life" (where 'flame' stands for fever), as quoted by Richards in his *The Philosophy of Rhetoric*, Oxford University Press, Oxford, 1936, p. 96.
- 7 These were known to Aristotle. See, for ex. *Poetics* 1457b, 5-10, where he discusses the structure of a metaphorical expression such as "sowing around a God-created flame".
- 8 Goodman: 1976, *Languages of Art*, Indianapolis, Indiana University Press, pp. 68-74.
- 9 It is interesting to see that in relation to the first two points of my discussion, the social sciences and the natural sciences do not substantially differ in their use of metaphorical language. An essential difference, however, emerges in relation to the last point -in that the aim of the natural sciences is to be able to shift from a 'good' interpretation to 'the right' one.
- 10 "Doing ethnography is like trying to read (in the sense of 'construct a reading of') a manuscript -foreign, faded, full of ellipses, incoherencies, suspicious emendations, and tendentious commentaries, but written not in conventionalized graphs of sound but in transient examples of shaped behaviour". Geertz, C.: 1973, *The Interpretation of Cultures*, Basic Books, Harper Collins, p. 10.
- 11 Here, incidentally, Geertz makes use of another metaphorical expression -'thick description'- borrowed from G. Ryle, 'Thinking and Reflecting', and 'The Thinking of Thoughts', *Collected Papers*, 19. Ryle uses the expression to explain the difference between a twitch and a wink as a difference between a simple bodily movement and a human action. A twitch and a wink can receive the same 'thin' description (a muscle contraction); but a wink is not simply a twitch, and the way to tell the difference is by

- exploring the multiplicity of possible 'thick' descriptions or interpretations, which can be attached to a wink as a type of social gesture.
- 12 Cockfighting is an 'art form', according to Geertz. Just as with the great texts of our literary tradition, such as *King Lear*, or *Crime and Punishment*, everyday experience presents itself in terms of acts and objects which are secondary to the themes, underlying meanings and ideals which they actually stand for.
 - 13 Geertz, C.: 1983, *Local Knowledge*, Basic Books INC., New York, p. 10.
 - 14 Ibidem., p. 5.
 - 15 For an interesting reconstruction of Geertz's anthropological view, see Borutti, S.: 1993, *Per Un'Etica del Discorso Antropologico*, Guerini & Associati, Milano, Part II, ch. 1.
 - 16 See *The Interpretation of Cultures*, p. 15.
 - 17 Zohar, D.-Marshall, I.: 1993, *The Quantum Society*, Bloomsbury Publ. Ltd.
 - 18 Ibidem., p. 19.
 - 19 In recounting these features, I will follow Zohar and Marshall's description -although it has been pointed out to me that this description is at times misleading. In what follows, I will not concern myself with an evaluation of the appropriateness of the authors' reconstruction and knowledge of quantum physics.
 - 20 "The physicist acts as a midwife to reality, helping through his or her intervention to evoke one face of reality's rich, underlying potential"; "In the quantum realm, the wave-particle duality and the creative dialogue between quantum potential and experimental circumstances shows us that there is always more to reality than we can experience or express at any one time". *The Quantum Society*, p. 23.
 - 21 "The existence of virtual states shows us that we can experience more than one reality at a time, each playing out its individual drama simultaneously with that of others. In quantum language, these multiple realities are known as 'superpositions'. Ibidem, p. 27.
 - 22 "The new system to which their (the two systems) overlapping gives rise now has its own particle and wave aspect, and its own new corporate identity. It is not reducible to the sum of its parts. We can't say, as in classical physics, that the new system is composed of *a* plus *b* plus the interactions between them. It is a new thing, an 'emergent reality". Ibidem, p. 31.
 - 23 It is not accidental that the chapter on the quantum nature of the mind appears very early on, in the book. It is as if the authors were trying to set establish conditions for the acceptance of their quantum argument: science is the foundation of every sort of experience. Zohar and Marshall actually claim that 'physics is a universal language' (*The Quantum Society*, p. 14). This is, to my mind, the rather dubious sub-plot for the main argument of the book. By saying why I find it dubious, I hope that a more general viewpoint about the use of metaphors in social science will emerge.