

## 2.

### REALLY? Epistemology and Foreseeing

*“Toute ‘bonne’ théorie scientifique consiste à proscrire: à interdire à certains faits de se produire. Sa valeur est proportionnelle à l’envergure de l’interdiction.”*

Karl R. Popper (1985, 64)

This chapter deals with the epistemological conditions on which it is possible to base the scientific prediction of the future. Prediction is one of the most important aims of scientific enquiry and, for some, arguably one concerning its very nature. Knowledge *per se* remains science’s main goal, but prediction represents its legitimising principle: if a theory explains something according to some conditions, and then when those conditions are fulfilled but it does not happen what it was predicted, the theory is held to be mistaken. More specifically, however, this chapter tries to understand if it is possible to scientifically predict political change and, therefore, the historical transformation of the forms of interaction among human beings that concern both authority and social organisation in a historically and geographically determined group.

Hence, the epistemological bases of such a prediction concern both the general epistemology of knowledge – whether or not science can actually predict – and the more specific epistemology of human and social sciences – whether or not science can actually predict human behaviour.

Fred Halliday (2005, 4-7), in his latest work *The Middle East in International Relations*, passionately refuses the concept according to which social sciences should aim to predict. It is unreasonable, he argues, to request that social sciences copy the natural sciences when the latter are very much unable to advance reasonable predictions. On the contrary, social sciences should focus on explaining the past in order to highlight the main tendencies of the present. In other words, the past can help to explain what has shaped the present.

As a preliminary, it has to be said the activity of explaining the past in order to understand the present is epistemologically risky, because it can mean interpreting the past according to the present – and that can happen when the researcher lives in the present and analyses the past. This perspective can cause the researcher to fall into what is called the hermeneutical cycle, which particularly concerns the comprehension of written texts but is of interest to every scientific activity involving interpretation, and therefore historical analysis as well. The hermeneutical cycle is the problem of how to understand a text and, at the same time, its single parts: each part should be considered alone, in its own meaning, and then combined with the other parts, and their own meanings, in order to shed light on the meaning of the whole. Yet, in order to understand the individual parts, we need to understand the whole. In other words, the hermeneutical cycle is formed when the part is given a meaning because of the whole, and the latter is given a meaning because of the former.

From a historical perspective, any single moment and event in the past is assigned a certain meaning according to what it has produced, and the past is used in order to better understand the present: even if temporally displaced, it is still the whole that gives meaning to the parts, and the parts to the whole. In fact, how do I know that the event did not mean something different in the moment in which it happened? Or, similarly, how do I know that a factor that now seems important in fact did not have a role in producing the present? Because I relate it to other events and meanings and therefore I understand the single event and factor as a reflection of the whole. Yet, if I use the past in order to highlight the present, then I am reading the whole according to the parts, and therefore I fall into the hermeneutical cycle. Expressed in a different way: I find that the past sheds some light on the present because I am looking at it from the present. But how can I know that those parts are exactly the ones that maintain a relationship to the present, and not others that I am not able to identify?

Hermeneutics, and historical analysis, have found their own ways of dealing with the problem (for instance, they transform the circle into a spiral), and I am not suggesting that Halliday is not aware of it. More generally, the question here is concerned with whether the present can really help us to understand the past. As Bertrand Russell observes, if a chick receives its feed every day, it will be justified in thinking it will always be like that. Yet, one day, the person who was feeding the chick kills it: that was the very reason he/she was

feeding the chick. Until the moment the chick is killed, the past justified its theory. Unfortunately, it was clearly and tragically an incorrect theory - for the chick.

Halliday's position implies that an interpretation of the past is right until proven wrong by a certain event in its future – the present, according to which the past has been interpreted, confirms the interpretation of the past and, hopefully, the future will keep confirming it. Such a position is an apparent application of Popper's or Lakatos' criteria of scientific knowledge. However, by following Popper, this approach provides theories that cannot be tested precisely because they refuse to predict and do not take any risks, and therefore it cannot be regarded as scientific; and, similarly, the refusal to make predictions condemns such theories to not being in compliance with Lakatos' criteria.

In addition, to refuse prediction but to accept the possibility of knowing the present through the past is logically flawed: to say that the past can help to explain the present implies that it maintains a certain relationship with its future, which is the present. And therefore, the present maintains a certain relationship with the future. The problem is to discover what, in the past or equally in the present, is related to the future. Arguing that the past can be understood only by looking at it from the present is reasonable, but a bit too easy. It is intuitive that the past can be better understood from the present, because it is possible to analyse a phenomenon as a whole, have access to a wider amount of information, etc. but, epistemologically, it does not make such a big difference. The problem is how to understand the phenomenon as a whole while it happens, and among the parts that form the whole to discern which ones are linked to the future.

In spite of Halliday, science is indeed an activity of prediction: if I push a key in order to switch on this very computer that I am using to type this thesis, science tells me that the computer will start to work for certain reasons. In other words, science is a specific way, and nothing else, of predicting. It can do it deterministically, or according to trends, or conditions, or to causes, or according to probabilities, but science is still based, in general, on the idea that it is able to explain, or to understand, the relationships between phenomena.

Hence, the question concerns the relationship between the past, the present, and the future; and, more generally, the meanings of links and assumptions we can accept in order to infer one phenomenon from another, and therefore in order to explain and regard a

statement as 'true'. This question has been the very object of the speculation of philosophy of science.

I will try to deal with the question as little as possible, because I am not a philosopher of science. In addition, it should suffice to sum up some of the main general points. I will outline, firstly, the general epistemological debate on the criteria of scientific knowledge by following an outline history of the philosophy of science focused on the last century. The discussion concerns both natural sciences and social science; the latter, in fact, have been established thanks to a device proposed by the founding fathers of sociology, especially Stuart Mill and Comte, namely 'objectifying' human phenomena by assuming that social events can be explained in terms of social constructs, and therefore by treating human events as natural events (Dilthey, 1900).

Of course, the profiles raised by general epistemology also concern the human sciences. However, the latter consider the human being their object of enquiry. The fact that he/she is a 'total' and unique phenomenon, in any sense but especially in terms of both time and space, forces human sciences to face specific difficulties when being considered sciences, and to somehow rely on different criteria of scientific knowledge. What I am trying to understand – whether there could be some epistemological foundation to a scientific prediction of the future of political, and therefore human, change – requires that we deal with two, in a certain measure, different questions: whether there can be, and what are in the affirmative, the criteria of scientific knowledge that could suit both social and human sciences. I will treat the two questions as distinct.

As far as the natural sciences are concerned, it was at the beginning of Western philosophy that philosophers started trying to reason about how is it possible to 'truly know' an object. According to Aristotle, four causes, the 'reasons' according to which a phenomenon is produced, (as opposed to 'conditions' - 'reasons' without which the phenomenon is not produced) are necessary in order to know an object: its formal cause, which is the idea it is possible to have of an object; its material cause, or the object itself; its final cause, or the aim of the object; and, its efficient cause, what produces the object.

Since the eighteenth century, scientific enquiry into the conditions of knowledge in the natural world has maintained that only the efficient cause is necessary; in other words, knowing what produces the object is enough to grasp it, and therefore know it. In fact, for

the determinists the efficient cause automatically determines the object, and therefore becomes the 'reason' of its very existence.

Hume refuses causality, because he argues that the origin of all ideas is 'feeling': it is not possible to 'feel' causality, or to experience it, and therefore it does not exist. Causality is a human product, a way of ordering reality, and another name for personal experience. Contrary to Descartes, he accepts knowledge only as a product of experience. Therefore, he introduces a double limitation: the knowledge available to human beings is limited by the agent, the human being – and the only way of knowing it (Butchvarov, 1959) – and is confined within the world in which he/she lives. The result is that science is the way in which the human being explains how the world which he/she can 'feels' works: the method is clearly observation and experimentation.

However, experience is not enough in order to judge if something is true or not. As Popper (1978) points out, the observation of a number of white swans does not justify the conclusion that all swans are white. More generally, the problem, which is called 'the problem of induction', concerns how to rationally accept the truth of a statement as found through observation. It is clear that truth obtained by observation cannot base itself only on logic. The justification of accepting as true – and therefore universal - the results of observation and experimentation needs to be based on what is called a 'principle of induction', which must be a synthetic statement, in other words a statement whose negation is not in contradiction but logically possible (for instance, swans are white), or deduction would be a better way to offer true statements. However, the principle needs to be universal, because to base it on experience requires anchoring the observation on a principle belonging to a superior level, which needs to be based on another one, and this way regressing until infinity.

Kant solved the problem by basing the principle of induction – which he called the 'principle of universal causality' – as 'valid *a priori*', in other words, it does not follow from experience, it is based inside the human being. Indeed it is inside every human being that the universal and the specific meet, and therefore there is no need to base induction on principles belonging to different levels. Causality is a fundamental category of the human soul (therefore *a priori*) which applies it in order to recognise synthetic judgements derived from experience as being true: it is the very way the human being works that allows true knowledge.

At the beginning of the last century, quantum physics undermined Kant's solution: the impossibility of predicting the trajectory of an electron when hit by a photon led Heisenberg to conclude that truth is never certain. At best, truth can be based only on probabilities, when many numbers are involved, but the single event escapes being held as true. In other words, causality can be understood and maintained as probability, but that means certain knowledge becomes impossible. What is important here it is that truth, and the possibility of human knowledge, leaves the human being. From this moment, the rational basis of science needs to be anchored in something else.

The philosophers belonging to the Vienna Circle offered logic and probability. More particularly, they held that empirical findings maintain a certain degree of truth, in terms of the number of cases observed: there is a scale of truth, and not a single truth. However, Popper (1978) points out that such a solution is not really a solution: inductive inference would still need to be based on a principle of induction modified to accept probable truths. And therefore requiring again a principle of a superior level, etc. – exactly as before.

For him, the solution can be found in the method, or in the 'deductive method of control'. According to this method, a hypothesis can be accepted as valid, and true, only after being tested empirically according to a test advanced before its statement. Indeed, today social sciences most commonly work through his hypothetical-deductive method.

His 'procedural' criterion of knowledge follows on from some basic considerations, which follow a precise reasoning and can be summed up as follows: firstly, if we search for confirmations, it is not difficult to find them for the majority of theories. Therefore, the question is: how can we distinguish between scientific and non-scientific theories if the criterion of factual confirmation cannot be maintained? Secondly, the answer is that confirmations cannot have any value if they result from predictions that did not involve a certain risk of being proved not valid. Therefore, considering that the nature of every good theory is to proscribe, which means to interdict certain outcomes, then (thirdly) every theory that is not refutable by an imaginable event declared in advance of its proposal is not scientific. To conclude, to scientifically prove a theory means to try to disprove it – this is a matter of degree and risks involved in the theory – according to authentic tests, or tests that can actually disprove it. And, to qualify this, new *ad-hoc* interpretations of the theory that allow it to pass tests and falsifications are acceptable, but the scientific statute of the theory is ruined or, at least, affected. To present Popper's criterion from another

perspective: a theory can be scientific even if there is no evidence whatsoever supporting it. The distinction is no longer between scientific and un-scientific theories, but between scientific and un-scientific methods.

This is a quite a shift from the previous philosophy of science: science does not base its rationality on the human being, but on itself, on its method that, clearly, is 'simply' a technique.

However, Kuhn (1996) refuses the idea according to which any knowledge is possible, and therefore that technique has an internal rational logic. According to him, science has nothing to do with truth. By adopting a historical perspective, he argues that the history of science is nothing other than a succession of different scientific 'paradigms', which are models of science involving a theory, a method, and a system of beliefs. The arising of anomalies, in other words, cases which the 'hegemonic science' cannot explain, produces the emergence of another paradigm, which is another science that is able to explain the anomaly. The succession between different paradigms, however, is not linear and does not involve an idea of progress. In many ways, science is a social product, and is not related to truth.

Kuhn marks the shift from the issue of truth to that of power, in his case mainly social power, which will characterise epistemological enquiry for the last part of last century. In fact, his starting point is that a scientific community cannot work without a set of established beliefs, which are received through 'rigid and rigorous' educational preparation. In other words, a scientific community sustains 'normal science' through reproducing it in the minds of future members of the community. Scientific enquiry becomes, therefore, an enterprise aiming to force nature into the boxes provided by the scientific paradigm, and to exclude anomalies. Passing from one paradigm to another is therefore indeed a revolution, seen roughly as a proper struggle for power between a resisting community and a new scientific community that has been able to establish new assumptions through the re-evaluation of previously known facts. There is no rationalism driving the process, it is a matter of chance and struggle. From another perspective, therefore, scientific power is not justified by the rationalism of the scientific endeavour.

Lakatos (1978) accepts some of Kuhn's arguments, while attempting to defend rationalism in science. In order to do that, he tries to disentangle science from power by reformulating Popper's approach. In particular, he refuses to accept the relativism that Kuhn's position

involves but he has to agree that anomalies do exist. He actually concedes even more: anomalies not only exist, but they are part of the very enterprise of science and characterise all theories all through their lives - a theory is 'born' with anomalies and dies with anomalies'. However, by building on Popper's reasoning, he claims that a scientific theory is not simply a relationship between facts, but an expression of a wider research programme. Facts can prove a theory wrong, but that is in the nature of the research programme, which modifies itself in order to accommodate the anomaly. Hence, the problem is not to look for theories with no anomalies, but to distinguish between 'good' (scientific) and 'bad' (non-scientific) research programmes - and not between scientific and non-scientific theories. Popper's disproof solution can hold for research programmes but not for theories. In fact, research programmes can be, in one way or another, disproved immediately after they are stated - for instance, Newmann, a distinguished physicist, disproved Einstein's relativity theory just after it had been affirmed.

The criteria Lakatos proposes is that scientific, or progressive, research programmes are those that are able to predict novel and exceptional facts - and one of the examples he offers is that of Halley who, working in Newton's programme, calculated to the minute when the comet which is named after him would appear at a certain point in the sky seventy-two years later, when he was long dead. On the contrary, pseudo-scientific, or degenerating, theories are fabricated only in order to accommodate established facts. According to Lakatos, Marxism, for instance, which Popper had already ruled out as scientific (as opposed to Marx's work, which he regarded as properly scientific), has never predicted a 'stunning novel fact' successfully. Marxism explains facts and events *ex-post*, by successive modification of the theory, and not *ex-ante*. Scientific enquiry can be regarded as rational because scientists tend to join progressive research programmes while abandoning degenerating ones. Rationalism is therefore based on both science and human beings, and 'scientific power' is justified by claiming rationalism in the process of improvement of science.

From another perspective, Lakatos, therefore, sets the future as the very criterion of scientific knowledge. However, his argument is weak: firstly, by following Popper he refuses facts as criteria for judging the scientific status of a theory only to reintroduce them as the main criterion, even if he places them in the future and qualifies them as necessarily exceptional, as 'stunning novel facts'. And, secondly, as noted above, by placing such



‘exceptional’ confirmation facts in the future he does not solve the basic problem: how can we know that a fact has been produced as the theory predicted, but not according to the reasons on which the theory is based? I recalled earlier that the efficient cause is the reason of the object (if we are determinists), but that can hold if the experiment is repeatable. Yet an ‘exceptional’ fact is, by definition, not usually available and therefore not so easily repeatable. The problem is not so important as far as natural sciences are concerned, but it is indeed important for the social sciences, and essential for human sciences, which research non-reproducible phenomena.

Feyerabend (1975) is not impressed with Lakatos’ efforts both to find a rational solution to the problem of scientific enquiry, and to justify scientific power because of its rationalism. He actually bases his ‘anarchist theory of knowledge’ on power. From two perspectives: firstly, in internal terms, or considering the very nature of scientific progression; and, secondly, in external terms, or according to the relationship between structures of power (such as, and mainly, the state) and science.

From the first point of view, according to him, science is an essentially anarchist enterprise, because the only principle that actually does not inhibit progress is ‘anything goes’. Scientific progress cannot be guaranteed by only ensuring consistency between well-established theories and new hypotheses, because the latter only preserve the previous, and the outcome can only be scientific aridity. On the contrary, a proliferation of theories is beneficial for science, while uniformity undermines science’s critical power. Truly, we should accept that any idea is capable of improving our knowledge. Any theory faces some anomalies (Kuhn and Lakatos both agreed on this), and that is because facts can be constituted by older ideologies (one aspect of the work of power) - a clash between facts and theory can be a sign of scientific progress instead of demonstrating the non-scientific character of the theory. Also, more historically, Popper has described something that really never existed; if science had applied his criterion, we would not have science, or at least not as we know it.

In fact, and from the second point of view as far as power is concerned, to be honest myth and science are strikingly similar. Science won over mythology not because of a superior ability to explain facts, but because it had been linked to power – that of the modern state. Indeed modern science did not convince its opponents, but ‘over-powered’ them. To link science to rationalism, and therefore to disentangle the historical role power has had both

in supporting science and in using it for its own goals, is not just unrealistic but it is pernicious because it limits individual freedom through the status (power) that science enjoys. Also, it is a dangerous operation for science itself, because it makes it too dogmatic by neglecting historical circumstances that influence scientific change. On the contrary, theories should be tested according not to their own methodology but according to different ones – in other words, different systems of thought. Feyerabend aims to break the universal validity associated with science, and therefore to disentangle science from power and, as a result, free both science and the human being. The result of the attempt is, however, absolute scientific relativism.

If we follow Feyerabend, and more generally post-structural and post-modern thought, there is no truth, not science. Scientific programmes become (part of) narratives and meta-narratives that do not present a more scientific character than narratives, or explanations and ideas believed by any human being. Theories are entangled with power, and refusing to allow them to be carriers of any particular values can only improve individual freedom. What becomes important is therefore to understand how power, and science, shape reality, and the human being.

To sum up: during the last century, epistemological thought has been marked by a shift from the issue of truth, and rationalism, to that of power. In other words, from the problem of understanding if truth can be justified in rational terms to the more political question of recognising the role power has in constituting truth and, in turn, the power that truth holds. Therefore, the central problem for the prediction of the future turns out to be not really whether predictions can be scientific, but whether or not it is possible to maintain rationalism in scientific enquiry, while freeing it from its close relationship with power.

The two issues are quite different, and belong to two different orders. The first issue is concerned with how rational scientific knowledge is, and specifically whether or not facts can validate a theory or if it is the internal structure of science that confirms truth. The second issue refers to human freedom and power, and therefore to how to free human beings from the power of science. Feyerabend's proposal to separate, after the Church, also science from the state (power) is a result of the denial of internal rationalism in science.

Maybe it can be possible to find a solution by keeping the two issues separate.

However, before dealing with the question of whether a solution can be found, it is appropriate to raise some of the specific issues and problems that the epistemology of human sciences had to face in order to claim a scientific status. In a certain respect, in fact, human sciences had to deal with some of the issues raised by Fayerabend, and interesting solutions have been offered. In addition, the object of human scientific enquiry – the human being – raises specific issues as far as prediction is concerned that, paradoxically, could help to identify a solution to the question of whether or not it is possible to scientifically predict human political change.

The line distinguishing between human sciences and social sciences is truly blurred, and positions vary greatly, from those who believe that the aforementioned are not sciences at all, to those who accept that they are specific sciences to those who deny them any scientific character. The problem arises from the fact that human sciences focus on the human being, and that brings with it some specific difficulties. These can be summarised as the following: firstly, methodologically, the problem of coincidence between object and subject; secondly, the problem of the uniqueness of human experience; thirdly, the problem of measuring; and finally, the problem of human change.

First of all, there is the methodological problem of observation or, in other words, the coincidence between the object and the subject of human science scientific enquiry - the human being. More specifically, he/she who observes is both the observed and the observer while, on the other hand, who is observed is both the observed and the observer. The outcome is a complex relationship: the object is a human being, who is constituted by the subject through the process of observation while, on the other hand, the subject is an object because of his/her nature as a human being.

In general, it is a methodological problem, that of external interference, which is stronger in human sciences than in natural sciences, where the problem can be more easily minimised - human sciences require inter-subjective methods, and therefore there is a direct action exercised by the subject on the object. This external interference arises mainly from three sources: firstly, from the plurality of cultures that work on the subject, and are projected onto the object; secondly, from the personality of both the subject and the object; and, thirdly, from the subject's personal values, which make him/her feel closer to a specific value system.

The question is how to solve human science's particular complexity and therefore ensure scientific knowledge. Devereux (1970) showed how the subject projects itself onto the object ('transfer'), and how the latter projects the subject back on him/herself ('counter-transfer'), therefore producing a 'distortion'.

Roger Bastide (1970) finds a solution in the *pluridisciplinarité*, which “*consiste à faire collaborer deux ou plusieurs disciplines en respectant l'autonomie de chacune d'elles*”, though accepting plural readings of the same phenomenon but setting them in the same perspective, which means practically that one discipline 'leads' the others and imposes its own perspective and approach on the scientific enquiry (Abou, 2002, 230-231). The *pluridisciplinarité* allows the different disciplines to correct each other and the researcher-subject to “*dépasser cependant la subjectivité inhérente à toute observation et faire même de la «distorsion» [...] la «vie royale vers une objectivité authentique[...]»*” (Bastide, 1970, XVIII). In fact, it is the very fact of being aware of the distortion that allows the subject to separate the objective from the subjective by acknowledging his/her own subjectivity.

From another perspective, human sciences are characterised by a specific approach: they present three dimensions (the social, psychological, and historic), and are based on the dialectic among these dimensions. Because such dialectic cannot be properly measured, they are primarily not quantitative. On the contrary, social sciences do not follow a dialectic approach, and therefore are based on the quantitative.

*Pluridisciplinarité*, then, could represent the solution to at least some of the methodological problems presented by the distortions derived by inter-subjectivity.

However, we should note that Popper (1985) denied, in general, the scientific status of human sciences (of course). In a specific application of his falsifiability criterion of scientific knowledge to human sciences, Alfred Adler's individualist psychology and Sigmund Freud's psychoanalysis, he explicitly rejects them as sciences – along with post-Marx Marxism and astrology - because they both only look for confirmations. In fact, for him, they observe according to the theory instead of following the reverse procedure; in other words, observing against the theory. In addition, they present some other specific problems: all of those related to self-suggestion and to the relationship that characterises the interaction between the psychologist and the patient (Popper, 1978). And, finally, he specifically accuses Freud's psychoanalysis of being based on mythology: despite the analysis' working on facts, these are facts that cannot possibly be tested. This does not

mean that the findings are deprived of any value – they are not absurd, but simply non-scientific. However, Popper concedes that human sciences include some scientific branches that can be regarded as scientific and therefore are not condemned to remain as non-sciences.

Yet if, in general, human sciences cannot be regarded as scientific according to Popper's criteria, could they be regarded as scientific if they followed different ones?

Indeed the object of human science is different from that of natural sciences: the human being is a 'unique' and 'total' phenomenon, and therefore a science concerned with his/her understanding should be based on solid foundations, with an attempt at solving only the methodological problems posed by the peculiar object of study not being enough.

Contrary to Popper, Raymond Boudon (1995) believes there is no difference between human sciences and natural sciences, because they share the same nature. First of all, in order to explain his position, he sets two different criteria according to which human science theories can be regarded as scientific: firstly, the criterion of universality, in other words that a theory needs to be comprehensible and acceptable for all human beings, regardless of culture; and, secondly, the criterion of being inclusive, or to be able to incorporate the other theories. Having posed the criteria, he confutes some of the critiques that could be raised against them: firstly, in a reply to Bachelard, who had argued that science is only that which can be expressed by numbers – the 'condition of mathematical formalism' – he points out not only that in human sciences that are theories and results that can be expressed in numbers but also and more importantly that the mathematical language is just a language, and therefore not superior to natural languages. Secondly, arguing against those who hold the view that natural sciences can predict while human sciences cannot, he recognises that some predictions are impossible but argues that if we assume that predictions represent the absolute value of science, then science should pursue only practical goals while, on the contrary, the aim of scientific enquiry is knowledge, and this is not a practical goal. Thirdly, he accepts that natural and social sciences are concerned with explanations, while human sciences aim to understand, but he argues that science is not defined by the method that is followed in order to gather knowledge, but by the fact that knowledge exists and is recognisable – therefore, his criterion of universality holds; and, finally, he partially accepts Habermas' critique on the role interpretation plays in

human sciences, but not as a criterion for distinguishing between the two – on the contrary, it is a problem that concerns both branches, and they should both minimise it.

Boudon's proposal is not very convincing: in particular, the criterion of universality is refuted by too many historical cases that show that, sometimes, human beings firmly believe something is true when this is obviously not the case (Lakatos 1978). And, more generally and logically speaking, if something is believed to be true because it 'makes sense' it does not mean it is actually true.

The arguably more solid foundation has been proposed by Wilhelm Dilthey (1900), the father of the epistemology of human sciences, who follows a different line of reasoning. He distinguishes between social and human science in terms of the object of study and therefore method: human sciences study the 'spirit', and employ understanding as their method, while natural sciences study the natural world, based on causality, and therefore their method is that of explanation. As far as the object of study is concerned, human sciences try to understand the specificity of human beings as opposed to the natural world; this specificity derives from the very feelings human beings have as subjects – in terms of awareness and freedom - and not objects. The method is not explaining, but understanding an individual experience as it had been lived thanks to the method of empathy, which attempts to recreate the experience. However, in Dilthey the distinction between nature and spirit is not absolute, because the human being is the result of both – history, for instance, is the combined outcome of causes and of human freedom. According to him, therefore, the totality of human experience could be scientifically studied by recognising the existing differences between causes and spirit, and therefore by both explaining and understanding.

However, Raymond Aron (1979) pointed out that it is not possible to recreate human experiences, but only to project the subject on to the object, and Paul Ricœur (1969) argued that empathy is indeed not a scientific method, but a 'psychological intuition'. Elaborating his position further, Ricœur argues that hermeneutics – the research of meanings - can follow two strategies: the first is the reductive, and the second is the teleological. The reductive approach looks for hidden meaning in the past in order to understand the present - and the 'masters' of it are Marx, who reduces everything to socio-economic relationships and class struggle; Nietzsche, who focuses instead on the will to power; and Freud, who believes truth can be found in sexual lust. The reductive is an

archaeological and regressive strategy, because it looks into and towards the past. Against it, it is necessary to adopt an amplification strategy, or the teleological approach – which focuses on ends - which allows for more interpretations and looks into the future. However, similarly to Dilthey, Ricœur does not refute explaining: on the contrary, he argues that it is necessary in order to ‘explain more to understand better’.

Claude Lévi-Strauss (1973) both agrees with and refuses Dilthey and Ricœur’s conclusions. According to him, human sciences are not true sciences because they study the ‘conscience’ of the human being. Therefore, firstly, the human being, his/her conscience, and human relationships are too complex to be grasped by science; secondly, inter-subjectivity relationships perturb observation; thirdly, experiments are impossible because human experiences are not replicable – and hence what can be studied are not single human experiences but the elements that reproduce themselves through human experiences in their relationship other elements, in other words the structures; fourthly, the object cannot be precisely defined because it is the very result of human complexity, and hence human sciences cannot be precise. The result of all of the above is that, finally, predictions are impossible.

According to him, the nature of human sciences is, therefore, that they are not sciences. They offer something in the middle between explanation and prediction: wisdom, which helps the human being to make fewer mistakes. More generally, human sciences are more similar to art than to science.

There is a preliminary conclusion then: human sciences are based on understanding, but this understanding is a result of ‘intuition’, of an ‘artistic’ activity, which derives from the common nature of subject and object. The problem which derives from this is how do we achieve some objectivity and is it therefore possible to compare the different results.

The third specific problem that comes from having chosen the human being as an object of study is exactly that, and it can be summed up as the problem of measurement - ‘conscience’, or ‘spirit’, are hard to quantify. In general, and to put it briefly, mathematical data and quantitative methods are excluded as suitable for human sciences. It is clear that if human sciences are interested in the ‘search for the meaning’ of a specific human phenomenon, which is characterised by both complexity and ‘totality’, then comparison is not possible. Among many positions, some of which argue in favour of mathematical measurement (for instance, that of the so-called Chicago School), that of François Furet

(1978), a historian, can be remembered: according to him, data can help both to pose questions and to limit answers. The problem that human sciences face is that there are too many variables to be considered, and it is not possible to identify the relative importance of each variable. Most of all, history cannot be formulated in mathematical terms and, even if that was possible, maths could not express the reasons behind events.

Therefore, qualitative methods seem to suit the aims and the very nature of human sciences better. Many methodological devices, and principles, have been engineered in order to assure a certain degree of scientific integrity in human sciences (the principle of generality or universality, methodological precision and methodological plurality, corroborating documents, etc.) but it is difficult to overcome the epistemological problems raised by the uniqueness of the object of study.

The last question raised by human sciences is very much more specific to prediction. If the human being is unique, then his/her experiences cannot offer any guidance in other cases. In particular, firstly, because the object of study is the human being, then he/she should be respected in his/her freedom to assign values to his/her own behaviour and to change it. In other words, the researcher cannot limit the freedom of the human being by predicting the future. In more general terms, this is the problem of what is called the 'self-fulfilling prophecy', or the statement of a theory which is confirmed not because it was true when stated, but because it becomes true thanks to human conforming behaviour, due both to personal acceptance and to the workings of power – of course, Huntington's theory of the 'clash of civilizations' could be the latest successful example of a self-fulfilling prophecy.

And, secondly or from another perspective, the human being is a being in continuous transformation. Therefore, what can be true today cannot be held to be true tomorrow. As far as prediction is concerned, the present does not offer any form of guidance for the future.

### **Conclusion**

Before drawing any conclusions, it should be remembered that the discussion above was not interested in analysing philosophy of knowledge in order to understand whether any prediction can be epistemologically valid. The focus, even if general epistemological



questions have been raised, was very much on whether it is possible to predict political change, which is the outcome of human actions.

From this perspective, prediction is excluded by both general and human science epistemologies. According to the first general field, facts do not confirm the scientific value of a theory; therefore, if a theory predicts something happening in the future, whether this happens or not is not particularly relevant. Of course, it could be possible to apply Lakatos' general criterion, but that has been ruled out because of general inconsistency. However, it has been argued that natural and social science epistemology has been marked by a shift from the question of rationality to that of power and, therefore, the question to be dealt with could be reformulated to whether it is possible to maintain rationalism in science while avoiding a specific status that science offers knowledge, and the power that that brings with it. As a solution, if we were able to disentangle power from rationality, then Popper's general solution could hold.

Science is haunted by power when it asserts something, because in that case it does not leave freedom to the object. However, scientific predictions both assert and deny something. When I say 'if I do X, then Y will (or it is possible for it to) happen' I am also saying that 'if I do X, then Z, M, S, etc. will (or it is possible for them to) not happen'. Or, (but this is, from our perspective, the same concept differently expressed): when I say 'if conditions A, B, C remain, then Y1 will (or it is possible for it to) become Y2', I am also saying that 'if conditions A, B, C remain, then Y1 will (or it is possible for it to) not become Y2'.

It could well be, then, that if science did not prescribe anything, but only proscribed, then a free space would be opened. This space would be limited by scientific theories, but it would not deny human freedom. This is the concept expressed by Furet – the tasks of science are to ask questions and limit answers.

Popper is in the same vein (1959, 276-285). In an address delivered to the Plenary Session of the Tenth International Congress of Philosophy, held in Amsterdam in 1948, advancing the general content of his forthcoming book *The Poverty of Historicism*, he specifically deals with the problem of prediction in social sciences. His definition of social sciences is closer to what I have been calling human sciences, because he argues against the historicists, including Comte and John Stuart Mill – and Hegel, Plato, and especially Marx – whose approaches I have described as qualifying social sciences – they are those attempting to

‘objectify’ human behaviour in order to treat social phenomena as natural phenomena (an attempt described by Popper as ‘naïve’ because it overlooks the fact that social constructs are constituted by social theories). In particular, he argues against the possibility of human, or social, according to him, sciences to predict a specific event in the future. Social sciences cannot make ‘unconditional historical prophecies’, as opposed to ‘scientific predictions’, for two reasons: the first is that natural sciences are conditional sciences, and historicists do not derive their historical prophecies from conditional scientific predictions. The second reason is that scientific conditional predictions can be stated only if they refer to systems that can be described as being well-isolated, stationary, and recurrent. Unfortunately, societies are not such systems. And, finally, the last reason is that history does not follow a discernible pattern, because human beings, who are constantly evolving, make it. On the contrary, the main task of social sciences is to “trace the unintended social repercussions of intentional human actions”. This presents a two-fold consequence: firstly, a scientific prediction is stated in a negative form – such as, for instance, “you cannot, without increasing productivity, raise the real income of the working population”; and, secondly, it makes social sciences very similar to natural sciences (Popper, 1959, 282), because it transforms the social world in a laboratory.

If rationalism and power ought to be separated in order to allow scientific predictions, then Popper’s solution (not the one above, which is entangled with power, but the more general one, which places rationalism in methodology) could be maintained. Other than power, the problem with Popper was two-fold: firstly, how to rationally explain anomalies in science (raised by Kuhn, Lakatos, and Feyerabend); and secondly, how to let science progress if rationalism is placed in the method (especially advanced by Feyerabend). From the first perspective, anomalies do not seem particularly problematic, because they are so only when science is assumed to bring truth; if science does not attempt to do so, anomalies can arise, but they would concern the space of freedom that is, by definition, populated by anomalies. From the second perspective, indeed science needs to be conservative in order both to be rational and to hold a certain degree of power. Clearly, that does not mean it should not take risks; on the contrary, it should state as much as it can about precisely what cannot happen. It is clear that the objection asserting that historically science has never followed Popper’s criterion is not particularly strong: if science has needed inconsistency in order to progress, then ‘Popperian’ science is indeed conservative. Indeed scientific progress

belongs to another field, that of freedom and non-science. In other words, if the future options are  $N$ , the role of science ( $X$ ) is to leave human freedom an  $N - X$  space.

Science could maintain rationalism in expressing what cannot happen more than what can happen while, at the same time, undermining the role of power associated with it. Power is introduced, and becomes problematic, when it asserts something, not when it limits options - or, better, in this second case it could be acceptable. As advanced earlier, such a solution opens up a space of freedom, which is related to what can actually happen in the future; in this space, science is not science, and does not hold any power – a researcher's opinion is as valid as any other opinion. To express the idea in other words, predictions become a matter of personal freedom, which leaves freedom to the object, and reality is not constituted by science.

On the other hand, progress comes from actually predicting the future. But this prediction, when it concerns the human being, is not derived from science, but from an artistic activity, from 'intuition', which finds its source in the very nature that is shared by subject and object. The correct prediction can be used by science in order to set new boundaries. From this perspective, science is then devoted to proscription. In this activity, both human and social sciences, and therefore both explanation and understanding, can be allowed. The method of *pluridisciplinarité* and the devices engineered by human sciences in order to reach some objectivity and comparison bring them closer to social sciences; their unwillingness to predict should not affect their ability to proscribe. Using Popper's criterion, human sciences can be regarded as sciences as much as they can offer some objectivity and follow the methodological criterion.

On the other hand, prediction cannot find its source in a reduction, as that requested by social sciences, or in an application of the correct methodological device as is hoped for by human sciences. Its source is the 'intuition' derived by the common nature shared by the subject and the object. Therefore, I would use 'proscription' and 'proscribing' to refer to science, which places its rationalism in the method, and I mean to imply that scientific theories ought to be expressed in the form of negative conditional statements. Flowing out of 'proscribing' is 'prescribing', which is the anticipation derived by a 'creative intuition', and which belongs to the 'space of freedom', where 'anything goes' and where there is no power, because there is no science. Inside the space of freedom, anticipating the future is free, anarchic, and open to all human beings, because arising from their common human

nature. 'Foreseeing', which is the whole activity of anticipating future political changes, results from the combination of proscribing and predicting. From this perspective, there is no collapse of science: science sets the boundaries of freedom, but does not constitute facts and human beings.

The question is whether foreseeing can arise only from an absolutely free intuition, as limited by science, or from a mystery as has been the case for thousands of years (and therefore it would be impossible to compare its statements), or it could arise according to an organised thought that can help some comparison.

Firstly, if the criteria of scientific knowledge is that it proposes, in advance, negative conditional statements regarding specific events of the future, what I have called 'proscription', then all 'research programmes' should be accepted as being able to offer some guidance. For a specific case, maybe post-Marx Marxism could not be regarded as scientific, but should a historical materialist neo-Marxist approach (such as for instance the neo-Gramscianism of Robert W. Cox, which actually focuses on long-term conditional positive predictions and which therefore needs time in order to be assessed according to the criterion outlined above) be dismissed so easily as well? I would argue that the task of proposing a framework for foreseeing the future means including all research programmes, regardless of their scientific value, because they too could concur to create the 'intuition'. It is within such a framework that every single theory could be assessed.

And, secondly, if the phenomenon I am trying to foresee (which is, in this case, historically and temporally determined political change) is a human phenomenon, then its 'totality' requires the adoption of a holistic approach. Everything should be considered, and valued. The framework is necessary in order to grasp all the different facets of reality and to remind us of who is trying to foresee them. However, it is true that versions of reality are infinite. Therefore, considering the fact that scientific enquiry is in itself a reduction, an acceptable compromise would be to allow all scientific approaches into the framework by rearranging them according to their shared elements. This way, the framework would include both the limits and the intuition of foreseeing. In other words, the framework should aim to allow comparison among all sciences claiming to offer scientific knowledge.

A comparison between foreseeing activities related to the same phenomenon is, obviously, not possible, because it remains within the world of art. However, if such activities arise from a common framework, maybe it is possible to compare the relationships, their

meanings, their values, etc. assigned by each researcher to the different elements, in order to understand the specific relevance of each. Even if it is not scientific, it could at least offer some amusement.