

The essence of things. Is there a methodological specificity in sociological knowledge?

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*Everything is real and not real
At the same time real and not real
Neither real nor unreal
(Nāgārjuna)*

Abstract

Scientific reasoning – presumed unique, perfect, objective – still solidly bases its foundations on the consequences of the evident success (theoretical and practical) obtained over the centuries starting from Galilean intuition. Over time, the granitic belief that scientific success can depend exclusively on a single, simple principle of method, has actually been slightly undermined; there is still a solid scientific basis about this idea, but the demands for rethinking and eclecticism also in the methodological approach begin to be "important". It therefore seems absolutely compelling to note the difference between "inanimate" sciences – which have gradually seen the level of complexity growing, however, resulting from the fact that the more the system of knowledge grows and the greater are the dark areas to be revealed – and "animated" sciences which have as their object of interest people, sensibility, ethics, behaviors and social actions.

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1. Introduction

The pleasure of discovering is one of the characteristics inherent in each of us, something that at a certain point in our life faces with arrogance and – usually – then remains attached to us for the rest of our days. From the discovery of the world around when the consciousness begins to make its way into the life of a newborn onwards, life is actually a succession of attempts to decipher the surrounding world using whatever is available to achieve this goal. It is probably something written in our genetic makeup of social animals, of actors that assume the awareness of being part of an overall multiform, complex and not always easy – and immediate – deciphering design.

But there are different ways, of course, to discover things. One concerns us all, usually involves many of our senses and has to do with our natural, innate vocation for discovery combined with a good dose of culture and social relationships in which we are immersed. The other is – a little more complicated – the fascinating world of scientific discovery. Fascinating and varied, difficult and fraught with traps, and far from having a unique and certain vision of the paradigm, as Thomas Kuhn would say (Kuhn, 1962). But let's go step by step. Meanwhile, the great distinction is precisely this: there is a scientific knowledge – linked to discovery – but there is also a knowledge that is based on experience. A knowledge that smells of common sense. They are two different things.

2. The need for complexity

Common sense knowledge is not always wrong; and scientific knowledge is not itself always true, unfortunately (or perhaps better, it depends).

Two different ways of seeing problems arise, of approaching them, of discussing them, of trying to solve them. In this duality lies the controversy between scientific discourse and common-sense discourse. They come from two different backgrounds and very often there is a tendency to make the leap – without a net – from one to the other, in a sort of spillover of knowledge. It usually happens mainly on social media. In between is the great heritage of scientific information, a very important topic (because scientists, for the most part, tend to be more cryptic than the situation needs) that has given us very important figures. But ours is the era of a fast and insatiable society, where things live the time of a like and then move on. This is one of the reasons for that wave of communications / information that is addressed to us on any topic (even those a little more difficult and complex to explain and understand) to which we refer today with the term *infodemic* (Han, 2022). Here, scientific

The essence of things

things walk with different times. All, regardless of the paradigm to which we refer, are generally slower.

So if we want to know something "certified" we can only refer to science, to those who with passion and effort – and slowly – work to "discover" things. We want to say it again: common sense is not wrong, indeed it is often right and reasonable. But it is not scientific, and as such it can be easily – and consciously – oriented starting from uncertain premises. In short, the risk that it is not true is high.

It's not that science is never wrong, quite the opposite. If it were never wrong there would not even be the need to go on, to try and try again, to adjust, to improve, to correct the shot. If it weren't fallible, it wouldn't be science.

And even among scientists from different disciplines, there is not always complete agreement on the scientific methods, which are obviously the basis of the discovery. The discourse is long and complicated, but shortly the two souls can be synthesized between those who consider even the mere understanding of a phenomenon as a scientific process and those who, on the other hand, also expect a formal explanation of it. Two distinct – and distant – worlds, two parallel universes, which only in a few disciplines related to the so-called human sciences, sociology in the first place, find a home with the same (roughly) scientific dignity.

And therefore the method of understanding linked to observation is legitimate, as the formidable research of the Chicago school, active in the first three decades of the twentieth century in the United States, famous above all for its studies of urban sociology, bequeathed to us. In the great mass of authors and writings on urban ecology we remember the genius of Robert Ezra Park, who was one of the main interpreters, who remembered how cycling was one of the best methods to "see" and think about some aspects related to the development of American cities of that period (Park, Burgess, McKenzie, 1925).

But in the same years another school grew up in Europe, the one known by the name of the city of Frankfurt, a sociological-philosophical school with a neo-Marxist orientation. The contributions of authors such as Adorno, Horkheimer, Marcuse remain very important, starting from a "critical" approach that wanted to overcome the limits of positivism. On the other side of science – that of the so-called "hard sciences", those that are not limited to understanding but demand an explanation – there are numerous examples to be given. And they mostly concern astronomers, chemists, physicists. Here, perhaps the physicists from this point of view are the most intransigent. For them the pleasure of discovery is linked precisely to the solution of a problem that has a beginning A and ends at a certain point B. And the discovery is precisely why – and how – it ends precisely in B and not in C. Very important, there is no doubt. There is a very wide range of problems that must necessarily be solved with a very rigid approach, like to one of physicists also used by many other scientists, including

biologists for example. And therefore the path of knowledge always includes a start, dictated by a lack of knowledge, the formulation of a possible hypothesis and then a series of experimental tests that will eventually corroborate or not the starting hypothesis. And the circle closes. Easy to say, even if things are not always so simple on the pitch, quite the contrary. And without forgetting that many of the relevant scientific discoveries arose from a situation known in scientific language as "serendipity", which could be interpreted with a phrase that more or less means: when you are intent on looking for a thing and the set of events for the effect of chance makes you discover another. Even the physicist and Nobel laureate Richard Feynman is fully aware of this, since he always reminds us – appropriately – that even the most exact science, his own, physics, is actually based on a probabilistic system and therefore can only admit, to the internal, the possibility of error (Feynmann, 1999). And to remain in the field of discovery in physics, we cannot fail to remember the young 23-year-old physicist Werner Heisenberg who, one night in 1925, in Helgoland, leaves his house, goes up to admire the impetuous sea from the top of a cliff and finally catches the enlightenment he lacked (Rovelli, 2020). The question that needed to be answered was simple and fascinating at the same time: how did the electrons move? This is the reason because one night of 1925 in Helgoland will remain in history. Because since then, it has become clear that reality can only be considered as a system of relations. The world we observe is a continuous interacting. It is a dense web of interactions. The properties of things exist only in the relationships they have with the environment that surrounds them. A great physics lesson, of course. But a key to understanding the social reality as well. You don't go anywhere alone.

On the other hand, there are some aspects that link the themes of science and knowledge to each other from a sociological perspective, which relate our – of each of us – being a singular, unique and unrepeatably individual and being necessarily part of the of a larger whole, of a collectivity on which we certainly depend.

Because after all, being part of a complexity in perpetual movement, without relationships, we would be a useless part of a whole (although not fully disclosed in its intertwined mechanisms between biological, environmental and social). The proposal then becomes the one of an inclusive, epistemologically tolerant sociology, without any claim to be exhaustive in its space-time arguments (which, moreover, as appears clear from particle physics, turn out to be social constructions devoid of the requisites of objectivity and truth itself). A sociology that is, however, open to the versatility of knowledge and to the certainty of the absence of linearity in the conclusions, to the awareness that there is no true paradigm that does not presuppose at the same time a possible error, and finally that even a fleeting glimpse of the social world must however try to make the best effort to be credible, even before plausible. Although

starting from an ineliminable assumption and – perhaps – the only certainty in the necessary premises: complexity, things, scenarios, require approaches and the analysis of the relationships between things and events.

3. The lateral movement of thought: from abduction to ANNs

Often, in order to achieve tangible results, as scientists we pretend to ignore that reductionism is only a partial approach to explanation: the hyper-attention on the parts does not allow us to grasp the plus that derives from the interaction, that sort of "reality emerging" from the whole that probably also lies at the basis of the very birth of biological life on our planet. And then all our efforts are aimed at unveiling individual aspects (in some way with a technical approach), which are often misleading with respect to the overall vision (and with respect to which, in fact, we are often unable to find an answer if not, perhaps, in the form of an apparent serendipity). The problem, perhaps, lies in the fact that we do not have the right tools, we have a toolbox that is largely underpowered with respect to cognitive needs; a bit like what also happened with the knowledge of the cosmos, before Hubble (and even before to those who dealt with space until the advent of the telescope). Despite this, we struggle with the idea that there can only be uniqueness in the scientific method, regardless of the fact that we study planets, black holes, trees, the atmosphere, horses, men, soldiers and wars. This is the approach that tends to separate (man and nature, but also mind and brain) often with very disappointing results: we consider our species, homo sapiens, as dominator of the world (with all the comforts that would derive from it) but then a bacterial infection or the strengthening of a virus is enough to bring everyone to their knees. And it pushes neuroscience to consider the brain exclusively in terms of neurons and synapses that can be described exclusively in electrical and chemical terms, practically eliminating the concept of mind altogether; and, on the other hand, the great deployment of forces which, by separating the mind from the brain, makes it an object that can be analyzed in itself, as if it were an objectively existing reality. In this way it is not possible to be aware of what emerges from the complexity of things, from their interrelation, which as an "emerging reality" produces what we call soul and consciousness (which are also part of us and help us in regulating of our being social animals). The problem, as we said, probably lies in the choice of tools for the box. Which is not unique, on the contrary, but certainly as it is it appears inadequate: it must in fact equip itself with a multiplicity of approaches according to whether scientists, first of all, deal with inanimate objects or, precisely, endowed with soul, conscience and consequently emotions. Scientific

reasoning – allegedly unique, perfect, objective – still solidly bases its cornerstones on the consequences of the evident success (theoretical and practical) obtained over the centuries starting from the Galilean intuition. Over time, the firm belief that scientific success can depend exclusively on a single, simple principle of method has actually been slightly scratched; a solid scientific basis still remains regardless, but the requests for rethinking and eclecticism also in the methodological approach are beginning to be "important". It therefore appears completely compelling to point out the difference between "inanimate" sciences – which have seen the level of complexity gradually increasing, deriving from the fact that the more the system of knowledge grows, the greater are the dark areas to be revealed – and "animated" sciences, which have as their object of interest people, sensitivity, ethics, behavior and social actions. The latter, far from the need to be treated with a logic that unveils the complication, instead see the awareness of considering their complexity to grow, which is almost never possible to deal with, as it happens in the other case, with systems of explanation cause-effect, usually however even linear. A complex toolbox, therefore, the one that seems to be the best for dealing with the waves of explanation in sciences and fields so different from each other, can only expand, in the meantime, also to abduction (also safeguarding approaches of deduction and induction), which somehow seems to be congruous in many situations in which there is a need to reconstruct the premises starting from rules and results that are somehow known. In fact, therefore, abduction does not want to make predictions, it does not seek probability but possibility, it does not calculate but asks questions and seeks answers. This is what we all do naturally on a daily basis: abduction is a form of reasoning that deals with probabilities and likelihoods. The logical conclusion of a solid abductive reasoning is therefore constituted by a hypothesis that provides the best explanation of a whole series of known facts. This is because if the thought is naturally inferential, abduction is somehow the only inference capable of making it move forward, of thinking about being in the future. It is essentially a situation of perennial tension towards explanation, which certainly runs in the direction of providing answers to questions that otherwise would risk being left unanswered. In some way it is a question of setting the starting state of a design process; and, as Peirce (1933) correctly points out, abduction can certainly represent initiation, where induction can be considered closure (obviously where the process can be completed in this direction).

Abduction occurs, therefore, when the thought makes a lateral movement (or even when it proceeds backwards and in this case it is also called *retro-duction*). What remains is that the arrival point of these three types is different: if for an induction it is a synthesis and for a deduction a thesis, that of an abduction takes concrete form in a hypothesis. In short, it is a question of broadening perspectives. The paradigm of simplification – and the uniqueness

The essence of things

of the method – resembles a research paradigm of the maximum utility of profit, in a common governance of science, technology and – inevitably – economics and markets. It is therefore a question of embracing multidimensional explanatory possibilities, in the face of an objective complexity of the paintings on which one works.

A situation as well known today as in the past: perhaps it is then worth re-evaluating Heidegger's path. The concept of *Vorwissenschaft* (preliminary science) (1919) then passed into the *Hermeneutik der Faktizität* (hermeneutics of facticity) (1923) first and subsequently landed in the *Existenziale Analytik* (existential analytics) (1927), can contribute to re-donating to sociological thought the interpretative polish that scientism seems to have definitely contributed to drain.

From this point of view it is therefore not surprising that his ideas were also very influential for sociologists. What is clear, in any case, is that at the basis of the great disputes between scientists – even and especially today – there is a lack of agreement precisely on the method. The case of induction, for example, is classic. Although induction is currently the most applied method in the analysis of the surrounding reality, not everyone agrees on the legitimacy of its use. Since the formulation of the principle of the uniformity of nature (the supposition according to which the future conforms to the past) by the empiricist philosopher David Hume, scientists have highlighted how, faced with the uncertainty of the course of natural events, it is possible to make facing the need to explain the surrounding reality only through the application of probabilistic models.

In short, what is provided is always a probable vision of things. Of course, in some cases even highly probable thanks to the precision of the methodology used, but always probable. That is, not certain, absolute, ineluctable. Here, what at first glance may seem like a weakness, should instead be read as a strength of science, which demonstrates and affirms progress and ever-increasing ability to solve problems almost daily. Certainty is something else. It is a faith. Those who want and feel the need for certainties must turn elsewhere, certainly not in the results of science, which must be respected and listened to. Otherwise, we also know how it might turn out.

After all, we have just seen a situation like that. From this perspective, the pandemic could also play a regenerative aspect on the social sciences, in particular on methods and consequently on relations with other scientific disciplines, exactly as the virus brings, in its devastating progress, opportunities for rebirth for societies and their vital organizations. A sort of stress virus also for what concerns the implications of the social sciences, therefore, which comes at a historical moment of evident difficulty of the same in general and of Sociology in particular. A crisis that arises from afar, from a scientific drift on

which much has been aimed, and which had the opposite effect to the desired one, imploding the capacity for scientific recognition of the natural vocation to know the mechanisms that regulate social action rather than to enhance it. Meanwhile, the social nature of the pandemic appears clear: not only – or not so much – because part of the containment measures concern the individual and collective social sphere (and therefore significantly affect our own spaces for maneuver within social relations) but above all because the same origin can only be interpreted by combining bio-virological studies with those on our collective behaviors and on many of the choices that have characterized our recent development models.

Viruses have existed for millions of years in nature, and it is only the behavior of the most important animal species that makes sure, with wrong choices, that they transit from one place to another. With consequences we have seen, they can be disastrous. The social aspects are therefore not simply a possible "cure" but can be analyzed *ex ante*, and from this point of view constitute a formidable aspect of preventive medicine (not in the strictly pharmacological sense of the term). The discussion therefore remains centered on the method, which has always represented the main vulnerability in the accreditation of sociological research in the scientific field. From this point of view, the choice of multiparadigmaticity heralded by the scientific community appears more and more as an attempt to request the legitimacy of positions on which no one wants to discuss in order not to run the risk of losing important room for maneuver – and academic power.

And while we stand here discussing the prevalence of how many towards which (or vice versa, it's the same thing), of standard and non-standard, of intrusive and periscopic, of objective and constructive, we slowly slip away from the main stage, that of recognized scientific knowledge. Our fault? I have no doubt.

And yet, there have been signs of a way out for some time. A possible path, an overcoming of the useless dualism that has torn apart the capacity for scientific accreditation. If we don't solve our credibility problems first, we're not going anywhere.

A new paradigm, which anticipated "in theory" what could have happened – and which happened on time – is that relating to the use of large amounts of data. It began to be talked about at the dawn of the new millennium, when big data did not yet exist. When the discussion was still centered on the concepts of statistical representativeness and on its real ability to respond to a sociological representativeness that was other only because – fortunately – we are gifted as people with brains unlike the black and white balls of probabilistic experiments, some have begun to show interest in the possibility of going further. As often

happens when you find yourself mired in an apparently unsolvable dualism, very often the way out is elsewhere. The first ANNs, artificial neural networks, mathematical models that simulated the behavior of the RNN sisters, the natural ones, made of neurons and synapses, helped me.

I dealt with it in the very distant time (from the scientific point of view) (Corposanto, 2001), proposing a new paradigm of interpretative analysis of data aimed more than at overcoming a sort of incorporation of classical approaches, qualitative and quantitative (and also periscopic and intrusive, on which then, however, I tried my hand a few years later) (Corposanto, 2007). The reasoning was simple: do I trust more the result obtained with a good number of cases (statistically speaking) elaborated with rigorously quantitative methods in compliance with the principle of the uniqueness of the scientific method or rather the results of a few and in-depth interactions seem more suitable qualitative on the basis of a grounded theory that overturns the hypothetical-deductive perspective? Based on which principle do I choose? I suggested, then as now, to rely on the only model that, instead of discussing the method, reasoned about the result.

The ANNs were the basis for observing exactly what was the trend of a phenomenon on the basis of variables – qualitative or quantitative that they were, also considered together, thus overcoming the limit of their operational "contamination" – different: the model "learned" from reality data and was therefore able to identify predictive paths of extreme precision. It was the keystone, albeit only theoretically. In fact, strictly mathematical approaches to human behavior have never convinced me, because the data, despite what some keep thinking, do not speak for themselves: but it was still a turning point. I believe that the great ability to have sociological imagination plays a central role in the ability of sociological analysis, but can be usefully employed in the choice of aspects, variables and models of interest from time to time. That turning point was the basis on which the so-called Multi-agent models were born (Manzo, 2014), simulation models, and it is the one on which today that the network has developed allowing great analytical skills, also thanks to the use of mixed-methods, on the same large amount of variables / data / information that can be found.

5. Conclusions

This is how a "neutral" methodological approach – from the point of view of the origin of the data-set and therefore also of the scientific disciplines that can draw information from it – brings different scientific approaches on the same level, no longer hard or soft as a sort of subdivision scientific-academic has always kept it alive.

The necessary uniformity of scientific approaches seems to be a very high price to pay, considered from the point of view of the human and social sciences. On the other hand, it seems impossible to do otherwise: the tight meshes of scientific recognition have never yielded anything, in the belief - yes, very weak - that anything must (can) be explained with a unique and unchangeable approach. The humanities and social sciences therefore had to accept the payment of this very high price, which in addition to relegating them to a group of minor importance, however, mortifies their potential and explanatory power: a sort of "*pizzo*" (protection money) to be able to r-exist and feast at the same table as scientists doing science. And this despite the contrary examples being numerous and very important. Just to name one in the economic field, let's discuss for example about the great mass of people who, throughout the West countries of the World, decide to no longer accept a job under certain conditions, which makes them feel prisoners in some way.

Economists with a neo-liberal training, who also represent the majority of academics, are amazed - and the greatest effort they make is to look for explanatory labels - in the face of a phenomenon that seems to be advancing like a rushing wave. To describe this situation that is only naively unexpected, we talk about *Quitting Economy*, *The Great Resignation Update*, *Yolo Economy* (You Only Live Once): an attempt to label situations not contemplated by the classic models usually used, which mostly involve food, services, products such as unique needs of people. They do not take into account and forget - because things are actually much more complex than they seem at first glance - of a whole other series of needs / requests / needs that characterize us as people: love, free time, social relationships, friendship, beauty, introspection. All things that are worth living for, and that more and more people consider as decisive in the choices of their life trajectories. And that cannot be put aside because the only dominant scientific method has no means to address them.

In this perspective, sociologists maybe could return to occupy a leading position in the scientific debate, relying on their ability to preventively read the situation to be analyzed (the phase of formulating hypotheses), putting in place an adequate intervention plan (for means of the imagination) and being able to count on an apparatus of techniques that today seem more suitable for grasping the meaning of things. Then, if I want to understand the state of mind of people who are experiencing a particular situation, I can therefore operate with a standard method (questionnaire and data analysis), through the reconstruction of interviews and / or life stories (to deepen how social reality is settles in individual consciences) or I can use *Big Data*, a very large amount of information from different sources (blogs, videos, messages, photos, comments, tweets, etc.) to grasp the essence of things.

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