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"ANALYTICAL SOCIOLOGY" AND THE EXPLANATION OF BELIEFS

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Abstract. Many sociological works appear as being particularly illuminating, *i.e.* as able to explain puzzling social phenomena, because they follow three basic rules common to all scientific disciplines. These rules are at the root of the sociological paradigm becoming popular today in Europe under the label "analytical sociology". But they identify a stream of sociological research that appeared notably with Weber's and Durkheim's work. These three rules are to a great extent responsible for the scientific strength of their respective work. They are crucial notably as far as the sociological explanation of collective beliefs, both representational and normative, is concerned, as examples drawn from the work of classical and modern social scientists illustrate. A special attention will be given to the beliefs that give a strong feeling of strangeness and for this reason were explored by many sociologists and anthropologists, as the beliefs in the efficiency of magical rituals.

Keywords: collective beliefs, methodological singularism, methodological individualism, ordinary rationality, cognitive equilibrium principle.

Résumé. Nombre de travaux sociologiques sont d'autant plus éclairants qu'ils se montrent capables d'expliquer des phénomènes sociaux énigmatiques en s'attachant à suivre trois règles communes à toutes les disciplines scientifiques. Ces règles sont à la racine du paradigme popularisé aujourd'hui en Europe sous l'étiquette de la «sociologie analytique». Cependant, elles identifient un courant de recherche illustré en particulier par les œuvres de Weber et de Durkheim. Ces trois règles sont en effet largement responsables de la puissance scientifique de leur œuvre respective. Elles s'avèrent cruciales dès lors qu'il s'agit d'expliquer des croyances collectives, tant représentationnelles que normatives, ainsi que l'illustrent des exemples tirés de l'œuvre de sociologues classiques et modernes. On accordera une attention particulière aux croyances provoquant un fort sentiment d'étrangeté, comme celles relatives à l'efficacité des rituels magiques, qui furent pour cette raison explorées par de nombreux sociologues et anthropologues.

Mots-clés: croyances collectives, singularisme méthodologique, individualisme méthodologique, rationalité ordinaire, principe de l'équilibre cognitif. In the 1980's a book on sociology had a tremendous success in sociological circles, Wolf Lepenies' Drei Kulturen (1985). It was quickly translated into the main European languages. It defended two theses: that sociology is neither science nor literature, but a "third culture" and that the great classical sociologists had been wrong when they maintained that sociology could be a science as any other. But the book was possibly inspired by the actual state of sociology at the time when it was published, in the 1980's, for, at that time, two trends in the social sciences, constructivism and structuralism, drew a great deal of attention, but had diametrically opposed orientations: skepticism inspired constructivism, while scientism inspired structuralism. Today, a new cycle seems to me to be opened with the birth of the so-called "analytical sociology" (see e.g. Hedström, 2005; Manzo, 2010).

A comment on the back of the collective book edited by Pierre Demeulenaere under the title *Analytical sociology and social mechanisms* claims that analytical sociology is simply "good sociology", suggesting that "analytical sociology" is essentially a reaction against the high degree of diversity that characterizes sociology since, say, the 1960's (Demeulenaere, 2010). I think "analytical sociology" is effectively the symptom of the end of the neither-science-nor-literature cycle and that it retrieves the ambitions of classical sociologists, i.e. making sociology a science like any other.

I will attempt in the following to develop two theses: firstly, that many sociological works considered as genuine scientific achievements follow three rules common to all scientific disciplines; secondly, that these rules are at the roots of the so-called "analytical sociology". Given the general topic of this meeting, I will concentrate on the importance of these rules for the explanation of beliefs, both normative and representational, since they raise the same questions.

I. METHODOLOGICAL SINGULARISM

Émile Durkheim, the sociologist whom all handbooks consider with Max Weber as the father of sociology raises in his Suicide a number of questions dealing all with singular social phenomena: why are the suicide rates of women lower than the suicide rates of men? Why are the suicide rates of Protestants higher than the suicide rates of Catholics? Why are the suicide rates of bachelors higher than the suicide rates of married people? Once he had succeeded explaining these and other singular phenomena, Durkheim attempted to synthesize his explanations in the broader theoretical framework of his three – or four – types of suicide.

Explanations of a host of intriguing phenomena characterize in the same way Max Weber's work. Thus, he wonders in his Old Judaism why Pharisians believed in the immortality of the soul, while Sadducees did not. Elsewhere, in his short essay on protestant sects in America, he wonders why Americans are much more religious than Englishmen, Germans or Frenchmen and discovered a cause which earlier analysts of the American religious exceptionalism, as Adam Smith or Tocqueville, had missed. The accumulation of the numerous explanations of these and many other puzzling singular religious phenomena he gathers in his Essays in the sociology of religions, proposes on the whole, as Durkheim's Elementary forms of religious life, a new way of explaining religious phenomena (Weber, 1986 [1920]; Durkheim, 1979 [1912]).

The great Austrian economist Ludwig von Mises has coined the notion of "methodological singularism" to christen the rule according to which a scientific explanation can bear exclusively on singular phenomena (von Mises, 1949). He wanted to distinguish by so doing explanation and interpretation. Thus, a complex sequence of events as, say, the 1789 French Revolution, can be "interpreted" rather than properly "explained", because it is by essence ill-defined. To begin with, nobody knows when it ended. To many historians, it ended with Bonaparte taking the power in 1800. To François Furet, it ended in 1870 with the Parisian Commune. Before von Mises, Georg Simmel had also made in a great book the point that some topics can give birth to interpretations, others to explanations (Simmel, 1892). Thus, there can be no unique final biography of historical major figures because a biography rests always upon a selection and differential weighting of some facts among a huge number of facts, the selection and weighting depending upon the sensitiveness of the historian himself and of his time. By contrast, there can be a unique explanation of a singular phenomenon as to why women commit less frequently suicide than men in given conjunctures or why Americans are more religious than Europeans. In a word, to von Mises, methodological singularism is a necessary condition of scientific explanation.

This rule applies, not only to sociology, but to all social sciences. That an Austrian economist coined the notion of "methodological singularism" can easily be understood. At the end of the 19th century, German and Austrian economists gave the impression of living in distinct intellectual worlds. To the German historical school and its main figure Gustav Schmoller, the main objective of economics was to describe the history of economic institutions. The members of the school had little consideration for the young Austrian who was rather concerned with explaining singular economic phenomena. The conflict has given birth to a quarrel, a *Methodenstreit*, which remained famous in the history of economic ideas.

On the side of sociology, the history of the Frankfurt school illustrates the same intellectual quarrel, as a meaningful anecdote drawn from Wiggershaus' monograph on the school shows (Wiggershaus, 1995). In the 1930's, several members of the Frankfurt school leave Germany and try to get settled in the American academic world. Max Horkheimer, a leading figure of the school, proposes to develop an ambitious social *Theory*, which he insists to describe with a capital T, a practice usual in German but strange in English, so that the American academic authorities are reluctant to accept his project. He was efficiently helped though by a young Austrian sociologist by the name of Paul Lazarsfeld. But as soon as the two had succeeded being recognized by the American academic world, they could not help expressing the deep intellectual disrespect they felt for one another. The main reason is that Lazarsfeld endorsed "methodological singularism", while Horkheimer's Grand theory rejected it.

2. CLASSICAL SOCIOLOGISTS ENDORSED METHODOLOGICAL SINGULARISM

By endorsing, if not the word, at least the principle "methodological singularism", the founding fathers of sociology were aware that they followed a principle governing all scientific disciplines. Thus, in his current work, a biologist deals normally with singular phenomena, as when he explores the behavior of some virus. He feels certainly concerned with broader questions, as of the origin or essence of life, but they do not directly constitute his research goal.

Max Weber follows the same principle as the biologist when he explains for instance why Pharisians believed in the soul immortality while Sadducees did not. This comes from the fact, he explains, that Pharisians were mainly shopkeepers and businessmen. To them, the notion of the equity of exchanges was a professionally crucial value. Consequently, the idea that the actions of people on this earth would be equitably rewarded after the physical death of the body, was palatable to them. Sadducees were by contrast a category from which the political and religious elites were drawn. To them, the notion of the immortality of the soul did not make sense. They tended to see it as a strange idea imported from abroad, presumably from India. Before Weber, Benjamin Constant and Tocqueville (1986 [1840], p. 527) had explained the Indian belief in reincarnation in the same way: as a symbolic expression of the idea that in the long run, at the end of the cycle of reincarnations, good and bad behavior will be equitably rewarded.

I felt necessary to insist on the fact that the founding fathers endorsed the "methodological singularism" principle, because a number of sociologists do not follow it. To mention two contemporary examples, the German sociologist Ulrich Beck (1992), never cares explaining singular puzzling social facts, but is rather concerned with characterizing the main features of modern societies: they would be risky societies, Risikogesellschaften. In the same way, the polish-english sociologist Zygmunt Bauman describes modern societies as "liquid", as societies that would have lost any fixed point (Bauman, 2008). Earlier, Gustave Le Bon reached an audience that Weber or Durkheim have never reached, because he described the societies of his time as characterized by what he pictured as a new phenomenon, the reign of the "crowds" (Le Bon, 1895).

3. METHODOLOGICAL INDIVIDUALISM

So, methodological singularism is the first rule common to all scientific explanations in the social sciences. Max Weber and Schumpeter, who recalls in his History of economic analysis that Weber had employed him for a while, identified a second rule. They called it "methodological individualism". Authors as Popper and Hayek then popularized the notion. Max Weber saw "methodological individualism" as the basic principle of what he called "comprehensive sociology": "comprehensive sociology, in the way I take this expression, considers the isolated individual and his action as its ultimate unity, as its 'atom''' (die verstehende Soziologie, in unserem Sinne, behandelt das Einzelindividuum und sein Handeln als unterste Einheit, als ihr 'Atom') (Weber, 1965 [1922], p. 415). Weber's text could not be clearer: it indicates that "methodological individualism" is the basic principle of "comprehensive sociology", because individual actions are the only possible causes of social phenomena. Unfortunately, handbooks often interpret wrongly "methodological individualism" as ignoring that social actors are embedded in institutions and social structures. The proponents of "analytical sociology" possibly decided to create a new word notably to neutralize this frequent misunderstanding.

It should be noted that the notion of "comprehensive sociology" itself was also and is still often misunderstood. Weber makes this clear through the careful parenthesis he introduces in the previous quotation: he writes "comprehensive sociology, in the way I take this expression", because he was aware that many social scientists gave the same expression a holistic rather than individualistic meaning. Even today, some handbooks characterize as "comprehensive" the type of holistic work that attempts at describing, say, the features characteristic of given societies or eras, as Dilthey and Burckhardt in the past or Ulrich Beck and Zygmunt Baumann nowadays. A history of the misunderstandings around the notions of "understanding" (*Verstehen*) and "methodological individualism" remains to be written! Against these misunderstandings, Weber defended clearly the idea that explaining singular social phenomena was the natural objective of sociology and that, as social phenomena can again have no other causes but human individual actions, explaining them implies determining the causes of these individual actions. This is exactly what Weber does when he explains why Pharisians believed in the immortality of the soul and why Sadducees did not. The causes of this macroscopic difference lies in the causes that made that ideal-typical Pharisians were likely to find the idea palatable, while the Sadducees were not. This analysis does not imply that the concrete individuals would have clearly perceived the reasons that led their attitude toward the question. Such reasons are rather *metaconscious* than *conscious*. But they are not unconscious, in the sense that actors can more or less easily retrieve them.

Before going further, I would like to make clear that, against the views defended by many handbooks, Durkheim endorsed implicitly also the principle of methodological individualism, notwithstanding his more or less obscure statements on the relations between the individual and social levels, in modern vocabulary: on the micro-macro link (Borlandi, 2011). His statements on the subject have by far not the clarity of Weber's. But, while his theoretical developments are obscure and probably inspired to some extent by his goal to impose sociology as a new discipline sui generis, his empirical analyses lean upon a conception of the micro-macro link similar to Weber's. Thus, in his Suicide, he explains the macroscopic fact that Protestant commit more frequently suicide than Catholics by introducing the assumption that ideal-typical Catholics are led by moral principles imposed by the Roman Church, while Protestant have to devise by themselves the moral principles they should follow by disentangling the messages of the Holy Scriptures under their own responsibility, so that they are more likely exposed to doubt and anxiety when existential problems confront them and hence more likely to find in suicide a solution to their problems.

Or, to take an example drawn from Durkheim's last book on the Elementary forms of religious life, he explains the fact that the notion of the "soul" is both universal and highly resilient, by contrast with other religious notions, by showing that the notion has a clear symbolic meaning for any individual in any society. In any society, he claims, any individual has the strong feeling that some types of behavior are legitimate or not, good or evil. In our modern nietzschean vocabulary, any individual has a sense of values. Moreover, he has the feeling that the values that he endorses are a basic component of his self. but that he has not devised them. He sees that they come from the outside. Consequently, he cannot avoid experiencing a strong feeling of the duality of his self. To Durkheim, the notion of the "soul" should finally be interpreted as a symbolic expression of this duality. Contemporary sociologists of religion, as Thomas Luckman (1967), have confirmed this explanation. I have personally shown that modern empirical research confirm Durkheim's thesis. The World values survey (Inglehart, 1998) shows that, while people become in most countries more and more skeptical about religions, their dogmas and concepts, the notion of the soul appears as highly resilient (Boudon, 2012a and b).

I could also have taken examples from Durkheim's Division of Labor. We observe a secular trend toward a substitution of civil for penal judiciary sanctions and toward increasingly lenient sanctions because the ideal-typical citizen tends to prefer less heavy sanctions as soon as they appear as equally efficient. Unfortunately, handbooks retain only from Durkheim's analysis that the increase in the social "density" and in the "division of labor" facilitates this process.

This second rule is the socialscientific version of a general rule valid for all sciences. When a biologist, say, observes a correlation between the regular consumption of some food and the frequency of some disease, he will look for the elementary mechanisms responsible for the correlation. Methodological individualism recommends in the same way to explore the elementary individual microscopic causes responsible for the macroscopic social phenomena.

4. COMPREHENSION AS AN OPEN CONCEPTION OF RATIONALITY

The notion of "comprehension" (Verstehen) was limited in Weber's mind to the explanation of individual actions. It encapsulates the third essential principle underlying the vision Weber and also Durkheim notably had of sociology as a science. To them, the causes explaining that any ideal-typical individual behaves the way he does or believes what he believes lie exclusively in the reasons as to why the individual behaves the way he does or believes what he believes. More precisely, an ideal-typical individual endorses some belief as soon as he has the impression that his belief is grounded on a system of reasons arousing in his mind the impression that they are acceptable and that he fails to see an alternative system that would lead to a different belief. It should also be immediately added that these reasons are in the general case parameterized by the context. As we recall, the Sadducees had not the same reasons as the Pharisians to believe in the immortality of the soul.

Durkheim is even more explicit that Weber on this point. One of the basic postulates of his explanation of religious beliefs is that people believe what they believe because they have strong reasons to believe it. He is very critical against the sociologists of his time who, as Max Müller or Lévy-Bruhl, analyze religious or magical beliefs as illusions generated in the mind of people by occult social or psychological forces. He is very ironical against the idea that beliefs can be explained as illusions. When a young child plays with his puppet, the observer has easily the impression that the child believes that his puppet is alive. But the child would be surprised if the puppet would suddenly bite him. Even a cat, adds Durkheim, understands very quickly that a ball is not a mouse. He plays a while with it, but quickly leaves it, for he understands that it is not a mouse. Durkheim would certainly have vehemently rejected the Marxist idea that consciousness would be basically "false", i.e. that social actors would be blind on the reasons as to why they do what they do or believe what they believe, an idea the sociologists of the structural school treat as a postulate. As Jean-Daniel Reynaud (2002) has claimed, the objective of sociology would have been according e.g. to Pierre Bourdieu to "deliver to human beings the genuine meaning of their actions" (Redonner aux hommes le sens de leurs actes). To Weber and Durkheim, actors are only half conscious of the reasons inspiring them because they normally concentrate on the goals rather than on the motivations of their action. This trivial observation is far from the postulate Marx, Mehring, Mannheim follow and that Bourdieu has taken literally that people would systematically endorse false representations of their motivations and reasons under the effect of the social structures.

A simple example from Weber will illustrate the idea that beliefs should rather be explained by the reasons that, given the context, individuals have to endorse them. Thus, an ideal-typical Western individual is surprised by the fact that "primitive" people seem to believe that their rain rituals are able to produce rain, but not by the fact that they rub pieces of wood against one another to produce fire. This can be explained by the context: a typical modern Westerner is more or less aware of the laws of the transformation of energy and notably of the fact that kinetic energy can be transformed into thermic energy. For this reason, the primitive firemaker does not surprise him, but he sees the beliefs of the rainmaker as strange. As to the "primitive" himself, he has no reasons, claims Weber in his *Economy and Society*, to make this difference: he sees his rainmaking and firemaking practices as equally grounded in theories in which he believes but that ideal-typical Westerners spontaneously see as "magical".

In this simple example, Weber introduces implicitly a powerful theory of rationality. This theory breaks with the current view on rationality by making the point that rationality should be seen as cognitive rather than instrumental. The example conveys in other words the crucial idea that explaining – understanding – an individual act, belief or behavior means determining the reasons that have inspired the act, belief or behavior in the mind of the individual, given that deciphering these reasons implies that the observer should be aware of the relevant features of the social and cognitive context in which the individual is embedded.

I have personally proposed to formalize Weber's theory of rationality and called it the Theory of ordinary rationality, in order to distinguish it from the so-called Rational choice theory, the theory of rationality most currently accepted today in the social sciences. The difference between the two is that the Rational choice theory introduces the idea that the reasons moving social actors would be basically egoistic and instrumental, while the Theory of ordinary rationality claims that they can be egoistic but also impersonal and not only instrumental, but also cognitive. Thus, the reasons explaining that Westerners perceive the behavior of primitive rainmakers as strange but not the behavior of firemakers are cognitive and not instrumental, impersonal and in no way egoistic.

As it claims a competence limited to the explanation of the means people use to reach their goals, the Rational choice theory suffers from a major shortcoming: it is doomed to explain the objectives, values and beliefs of people by postulating the existence of conjectural causes operating in the back of their minds. Rational choice theorists call generally these conjectural causes frames or frameworks. But the same explanatory scheme can be found behind many other notions as mentality (as in the example of Lévy-Bruhl's primitive mentality), habitus, etc. Some social scientists treat these causes as mere data, while others propose to derive them from psychological, social or biological mechanisms that are themselves in most cases highly conjectural. For this reason, Popper (1976) has convincingly argued that, as long as the social sciences will insist using such conjectural notions, they will necessarily stand on clay feet.

A clear distinction should be made in this respect between dispositional variables, as primitive mentality or habitus, which provide generally ad hoc pseudo explanations of behavior and the parameters describing the context of behavior. That the "primitive" do not know the laws of the transformation of energy is a parameter distinguishing his context from the observer's context. That early Christians did not make a distinction between natural and supernatural phenomena is a parameter distinguishing their context from the new context created by the notion that laws govern natural phenomena. Such parameters are empirical data, while dispositional variables are intrinsically conjectural and ad hoc constructs. Coleman's (1990) famous "boat" fails to make this crucial distinction, as it collapses the two categories into the single "individual attitudes / dispositions". Dispositions do exist of course, but their effect on behavior is highly unpredictable. As Simmel (1892) has well seen, an authoritarian education can produce a liberal or an authoritarian personality. Empirical

studies confirm that the relations between dispositions and behavior are weak and variable from one study to the other. A great lesson to be derived from Weber's analyses is that he practically never mobilizes dispositional variables. In fact, dispositional variables have been included into the sociologist's toolbox under the influence of behaviorism, an intellectual move that was considered as able to make psychology a hard science.

The Theory of ordinary rationality I propose to derive from Weber's work rests finally upon a basic principle I propose to call the *cognitive equilibrium principle*. It says that people believe that X is true, acceptable, good, legitimate, etc. as soon as they have the feeling that X rests upon a set of acceptable reasons.

Beside methodological singularism and methodological individualism, the cognitive equilibrium principle is finally the third principle I see as defining implicitly the paradigm used by the founding fathers as well as by many modern sociologists, a paradigm defining actually the core of the contemporary so-called "analytical sociology".

5. NETWORKS AND THE GENERALIZED OTHERS

The third principle excludes by principle the model of a solipsistic social actor, since an individual tends to perceive the reasons grounding his beliefs as valid only if he has the impression these reasons would likely be shared. I have proposed to qualify these reasons as transsubjective. The idea that the reasons motivating a belief in the individual's mind appear to him as valid only if he has the impression they would be shared provides a formal definition of the famous notion of the generalized others (Mead, 1934) that gives often birth to rather obscure comments in the presentation of Mead's writings. In plain words, while the Rational choice theory introduces the fiction of a solipsistic homo sociologicus, the Theory of ordinary rationality recognizes the homo sociologicus as a social being.

Incident remark: Networks are today a popular topic of sociological research. But they are often treated in a mere descriptive or mechanical fashion, while a connection with the Theory of ordinary rationality would make network research more fruitful, as many classical and modern sociological works suggest. Tocqueville has written: "we believe a million of things on the faith of other people" (Nous croyons un million de choses sur la foi d'autrui). In many cases, as soon as a friend or neighbor appears to us as credible, we choose to be influenced by his judgment on issues on which we see him as more competent or better informed. Lazarsfeld's two-step flow of communication illustrates this idea (Katz and Lazarsfeld, 1955). It is at the core of studies as Coleman's et al. (1966) on medical innovation or Manzo's (2009) on educational inequalities.

6. ILLUSTRATIONS

In the following, I will try to suggest by examples taken from various fields that the three-rule paradigm characterizing implicitly "analytical sociology", methodological singularism, methodological individualism and the cognitive equilibrium principle is a theoretical framework within which all kinds of phenomena of interest to the social sciences can be explained and have actually been explained.

I will consider successively examples where the social phenomena to be explained are representational beliefs, normative beliefs, long term and middle term trends, and practical solutions to classical interaction dilemmas, as the Prisoner's dilemma. I will also try to show by these examples, that although "analytical sociology" is a new expression, it is actually old wine in new bottles, since it essentially revitalizes the principles more or less implicitly used by classical sociologists, notably by Weber and Durkheim.

6.1. REPRESENTATIONAL BELIEFS

An example from Weber will illustrate the application of the three principles at the root of the "analytical sociology" paradigm -as I define it- to the explanation of representational beliefs.

Why, asked Weber, did the monotheistic cults imported from the Middle East, as Mithraism, attracted the Roman civil servants and army officers, while the Roman peasants felt deeply hostile to these cults and remained faithful to the traditional polytheistic Roman religion? Their hostility to Christianity was so deep that the word paganus – peasant – turned out to be used by Christians to describe the unbelievers: the heathens.

Weber explains the hostility of peasants against Christianity in the following way: peasants had trouble accepting monotheism because the uncertainty characteristic of natural phenomena, which is an essential dimension of their everyday life, did not seem to them compatible with the idea that the order of things could be subjected to a single will: a notion which implies a minimal degree of coherence and predictability. So, the basic reason why the peasants rejected monotheism, beside of course other more or less contingent factors, is that the Roman peasants, as good followers, so to say, of Popper's falsification theory, had the impression that the monotheistic theory was incompatible with data familiar to them. This analysis explains also that an impressive body of saints appeared in the early centuries of our age in the Christian world. Thanks to the saints, Christianity became more palatable to peasants, since they made it a polytheistic religion. The army officers and civil servants had by contrast the feeling that Mithraism and then Christianity expressed symbolically the basic principles on which the political organization of the Roman Empire rested.

6.2. BELIEFS IN THE EFFICIENCY OF MAGICAL RITUAL AS A PRODUCT OF ORDINARY RATIONALITY

I will use an example from Durkheim as a second illustration of the threerule paradigm. It has the advantage of being particularly brilliant, and also to show that Durkheim and Weber followed the same principles. Parsons had incidentally the powerful and right intuition of a strong convergence of the work of the two great founding fathers when he tried in his Structure of social action to ground sociology on a synthesis essentially of their works, and secondarily on Pareto's and Alfred Marshall's works.

The example of the beliefs in magical techniques has also the interest that the topic has inspired three canonical explanations. First type of theory: Ludwig Wittgenstein (1967) claims that people do not really believe that magical rituals can be effective. By practicing rain rituals, people would simply express their desire that rain falls on their crops. Second type of theory: Following Auguste Comte's lead, Lévy-Bruhl (1922) has contended that magical beliefs would derive from the fact that in the early ages men would have been less sensitive to logical contradictions or would not have made a clear distinction between relations of similarity and of causality. They would for instance have believed for this reason that hurting the puppet representing one's enemy would hurt him. With other words, Beattie (1964), Needham (1972) or Sahlins (1995) have followed Lévy-Bruhl's lead. They state that rationality is culture-dependent: people in traditional societies would believe in magical rituals because they would follow rules of inference different from the Western rules. The rules of inference Westerners consider universal would be in fact characteristic of Western culture. Third type of theory: Durkheim (1912), Weber (1986 [1920]), or today Robin Horton (1993), claim that magical rituals are the outcome of what I call ordinary rationality.

Wittgenstein's theory is incompatible with many observations. Thus, Africans believe in magical practices even after they have been converted to Christianity (Horton, 1993). When asked why, they answer that Christianity has the shortcoming of proposing no magical remedies against the evils of everyday life, while the animistic religion they come from offer such remedies. This observation is obviously incompatible with the assumption that they would not believe in the effectiveness of magical practices. Moreover, the believers in magical practices reject without hesitation the idea that they would have a mere expressive function.

As to Lévy-Bruhl's theory and its variants that see the rules of inference as culture-dependent, they use a very conjectural, if not merely ad hoc assumption.

Durkheim's (1979, [1912]) theory uses by contrast exclusively simple easily acceptable assumptions and is moreover compatible with all available data. When the primitive, in 19th century parlance, grow some plant, they use much empirical know-how transmitted from one generation to the next. But they also need to know why plants grow, wither and die. As this question cannot be answered empirically, they need to forge a "biological" theory to explain these familiar phenomena and draw it from the religious interpretation of the world available and treated as legitimate in their society. As to the magical practices, they are technical procedures derived from this biological theory. But magical practices are unreliable. Does not this show, as Lévy-Bruhl postulates, that Durkheim's Australians follow rules of inference different from ours, notably that they would be less sensitive to contradictions?

Durkheim's Australians not only dislike contradiction, though. They treat it as modern scientists do: by inventing auxiliary assumptions. We know from the Duhem-Quine thesis that, when a theory fails to explain some data, the normal reaction of any scientist is to invent auxiliary assumptions rather than to reject the theory. For, as he does not know *a* priori which element in the theory is wrong, it is reasonable for him to assume that an auxiliary assumption will likely reconcile the theory with the data. This is what scientists do, as the history of science shows. This is also what the magician does. In the case where his magical rituals fail, he will assume, say, that they have not been executed exactly as they should have been.

Durkheim himself raises another objection: that, since they are ungrounded, magical practices fail in many cases. Why does not this fact weaken the credibility of magical theories, against Durkheim's basic postulate that one should avoid to explain beliefs as the effects of illusions? Durkheim's answer is that, as the rain rituals are practiced in the period of the year where rain is more likely to fall, a correlation between the two variables days with / without rituals and days with / without rain will be normally observed. The correlation will of course be spurious. But modern Westerners ground also many of their beliefs on spurious correlations.

On the whole, Durkheim's explanation introduces exclusively easily acceptable statements: either empirical statements as "the primitive are unaware of Western biology", "the primitive dislike contradictions", etc. or psychological uncontroversial laws, as "in general people want to survive", "rather than throwing away a theory that explains many things, people prefer to check whether it cannot be amended".

Moreover, Durkheim's theory explains convincingly a number of puzzling data, as why magical practices were much more frequent in Europe in the 16th or 17th centuries than in the 14th century, and more frequent in the modern parts of Europe. It explains on the whole many comparative data, some of which have been discovered a long time after Durkheim (Boudon, 2012a, b).

An incidental point can be raised here: "analytical sociologists" talk of mechanisms to qualify statements as "in general people want to survive" or "rather than throwing away a theory that explains many things, people prefer to check whether it can be amended". I must say that I do not see why we should not rather use, as Demeleunaere (2011) suggests, the classical concept of *law*.

6.3. NORMATIVE BELIEFS

I will illustrate now the use of the three-rule paradigm implicitly defining the so-called "analytical sociology" in the explanation of normative collective beliefs. I will first use an example drawn from Adam Smith.

Adam Smith explains in his *Wealth* of Nations the feelings of fairness or unfairness the salaries of occupations arouse by making them the effect of strong reasons, in the sense that people would not easily see alternative more acceptable systems of reasons.

Why, he asks (Smith, 1976 [1793], chapter 10, p. 151-209), do we consider as normal that the public executioner is paid a relatively high salary? His qualification is low. His job supposes a low level of formation and competence. He is – thanks God – strongly underemployed. But, as his job "is the most disgusting of all", a reasonably high salary should compensate this. In short, the Englishmen of Smith' time found the salary of the public executioner justified on the basis of acceptable reasons.

Some other differences in salaries rest upon more complex systems of reasons. Thus, Smith's contemporaries generally considered that coal miners should be paid a good salary, while they accepted that soldiers would receive a modest salary. Here again, Smith explains this collective belief by assuming that it derives from reasons that any ideal-typical Englishman of his time would have easily accepted.

Here are these reasons. The two jobs require a low level of qualification. It takes a short time to train a miner and a soldier. Both are exposed to the risk of death. But people interpret spontaneously the death of a miner as an accident, while they regard the death of a soldier as a sacrifice for the sake of the homeland. Consequently, the soldier should be entitled to symbolic rewards

recognizing this sacrifice. As the two jobs were in the 18th century comparable from the viewpoint of qualification and exposure to risk, the principle equal contribution, equal reward required that miners receive a higher salary than soldiers, in compensation of the fact that, by contrast with soldiers, they were not entitled to glory and other symbolic goods.

To use a concept proposed by Smith in his Theory of moral sentiments, the relative consensus emerging on the question as to whether a job should be more or less highly paid derives from the sets of reasons developed by impartial spectators, *i.e.* by ideal-typical individuals trying to figure out systems of reasons everybody would likely accept. The impartial spectator is a crucial notion in Smith's Theory of moral sentiments that he uses implicitly in his later Wealth of nations.

According to Smith's analysis, people react the way they do when they learn that some type of job is paid the way it is, for reasons essentially of the cognitive type.

This example seems to me of utmost importance for another reason: it shows that normative beliefs of the type "X is good, legitimate, etc." can produce a consensus for *objective* reasons that all tend to accept because they are strong. Smith refutes here in advance the procedural theories that claim, as notably Habermas', that good procedures are the necessary and sufficient conditions of consensus on normative issues. Such theories ignore that good procedures can generate errors, as the history of science abundantly illustrate.

6.4. FEELINGS OF FAIRNESS

The three principles at the root of "analytical sociology" can satisfactorily explain the main empirical findings on the feelings of fairness.

Thus, Forsé and Parodi (2004) and Forsé and Galland (2011) have shown in illuminating empirical studies that ideal-typical individuals clearly consider some types of inequalities as acceptable and to no degree unfair, while they perceive others as illegitimate and unfair. Ideal-typical individuals do not perceive functional inequalities as inequitable: They easily recognize that rewards should be indexed on aptitudes, responsibilities, competence and / or contributions. They do not perceive either as unfair inequalities resulting

from the aggregation of free choices or decisions. Thus, they perceive the income of show business stars or popular sports men and women as abnormally high, but not as unfair or inequitable, since it results from free individual choices from the part of their fans or supporters. In principle, when the contributions of two individuals are of an identical value, they should be equally rewarded. But few people consider as unfair that two persons having the same job and executing the same tasks are unequally rewarded if they belong to unequally rich or dynamic firms or regions. Thus, if a plumber A is as competent as a plumber B but is employed by a firm confronted with serious economic difficulties, ideal-typical individuals would accept that his salary be lower even though his competence is the same. Ideal-typical individuals do not consider as unfair inequalities characterizing incommensurable activities. It is possible to argue with Adam Smith that miners should be paid more than soldiers, but it would be difficult, say, to argue that meteorologists should be paid more or less than lawyers. Ideal-typical individuals do not consider as unfair inequalities the origin of which is unknown or inequalities that one cannot qualify as functional or not, i.e. as reflecting differences in competence or achievement. This is an important point, for an overall income distribution is the product - in unknown proportions - of functional inequalities, of dysfunctional inequalities, and of inequalities of which it is impossible to know whether they are functional or not. For this reason, according to some illuminating but unfortunately rare observations, people did not consider until the last years the reduction of the overall income distribution as a major political objective. However, when global inequalities are as strong as in contemporary Western democracies, they cannot be held as functional: this arouses a negative feeling in the mind of ideal-typical individuals.

Finally, people consider inequalities that have the character of privileges as deeply unfair, as when a business leader who has led his firm to a decline is dismissed with high indemnities or when a political leader uses his position to generate illegitimate advantages to his own benefit. On the whole, once observations made by the social sciences on the relation between equity and equality are synthesized, they show that the public sees inequalities as fair or unfair on the basis of the cognitive equilibrium principle defining ordinary rationality.

6.5. INCOME TAX

A third example drawn from Stein Ringen's (2007) work will illustrate the role of the "analytical sociology" paradigm and of its *cognitive equilibrium principle* in the explanation of normative collective beliefs. By difference with the previous example, this one has the advantage of illustrating the cognitive process explaining why long conflicts on political issues can finally been solved.

For a long period of time, democratic societies have struggled with the question as to whether and in which form an income tax should be introduced. Following long political debates and conflicts, the income tax was defined as proportional. At a further stage, a consensus appeared on the idea that the notion of an income tax is a good one, that income tax should be progressive, that it should be moderately progressive. These three principles describe the situation currently prevailing in most Western democratic countries. To the exception of a few dissenting economists, they are widely accepted because ideal-typical individuals would easily recognize that strong reasons legitimate these principles.

These reasons are the following. Modern societies are roughly composed of three social classes. The three classes are: the rich, who have at their disposal a significant surplus which can be converted into political or social power (Boudon, 2005); the middle class, which enjoys a more or less important surplus but insufficient in size to convert it into political or social power; the poor.

Social cohesion, social peace, the principle of the dignity of all require that the poor benefit from a subsidy, from the middle class in the first place, because of its numerical importance. However, the middle class would not accept to take its share if the rich would not accept to bear the load of subsidies to the poor to a greater extent than the middle class, and this in conformity with elementary principles of justice. It can be concluded from these reasons that income tax should be progressive. On the other hand, it must be moderately progressive, since the principle of efficiency would be violated if the tax was too brutally progressive, for the rich would then be incited to transfer their resources abroad, generating a loss for the national community.

So, one can legitimately conclude that the consensus on income tax results from a set of convincing reasons. Once he is sufficiently informed, any citizen belonging to any of the social classes should accept the idea that a moderately progressive income tax is a good thing. The validity of the argument is responsible for the consensus and its stability through time. Some citizens influenced by their interests, prejudices or passions will likely be hostile to the idea, though. Some economists will dissent. But few people will follow them because they oversee the axiological dimension of the issue. An income tax that would be too brutally progressive would violate the principle of efficiency. The middle class would not consider a flat tax as fair.

6.6. LONG TERM EVOLUTION AS A PRODUCT OF ORDINARY RATIONALITY

The "analytical sociology" paradigm with its cognitive equilibrium principle can also explain long-term trends. I come back briefly to an already evoked example from Durkheim (1893). He has observed that a secular trend towards more lenient judiciary sentences characterizes Western societies. Also, civil rather than penal law treats an increasing number of types of misbehavior. And an increasing number of acts are prosecuted before lower-level courts.

These long-term trends derive mainly from a basic process: when a new type of sentence appears as equally effective in terms of dissuasion as a former one, and also as better from some viewpoint, the ideal-typical individual tends to accept and contributes to the selection of the new type of sentence. In other words, a basic two-stage mechanism is at work in this type of long-term processes, a rational selection of the innovations following the production of innovations. Durkheim has rightly maintained that some factors can facilitate this basic mechanism, as the increasing demographic density and the resulting increasing division of labor. The previous analysis can be easily applied to our modern world. Death penalty tends to disappear from modern democratic societies notably because it has been repeatedly shown that its dissuasive power is controversial. It makes judiciary errors irreparable and is obviously cruel. Moreover, the findings of genetic research make judiciary errors more easily detectable. In the long term these reasons lead ideal-typical individuals to prefer life sentencing to death penalty.

6.7. SOLVING RCT DEADLOCKS

The theory of rationality today prevalent in the social sciences is the so-called Rational choice theory. One of the important features of the Theory of ordinary rationality is that it can solve easily many questions the Rational choice theory is unable to solve. I will just mention a few examples.

As game theory rests upon the Rational choice theory axioms, several situations of interaction have no "solution" in the sense that the Rational choice theory is unable to recommend any satisfactory line of action. The classical structures of the prisoner's dilemma, the insurance game, the chicken game or the battle of the sexes have inspired a huge literature because they have no solution in the frame of the Rational choice theory.

The best social thinkers and sociologists have understood though that the right "solution" is to take steps to the effect of modifying the structure, if this is feasible. Thus, Rousseau has well seen in his Discourse on the origin of inequalities that the way to solve an insurance game is to destroy the structure by introducing legal constraints. Olson has shown that collective action can be trapped in an n-person Prisoner's dilemma structure, and that the solution is to destroy the structure by some innovation, as the closed shop or the production of selective incentives. The crossroads problem has no solution in the frame of the Rational choice theory, since Rational choice theory provides no way of choosing between the two Nash equilibriums generated by the problem. The solution is again to introduce an innovation in the form of a priority rule. The interesting side of Axelrod (1984) on the repeated prisoner's dilemma game may not be that the TIT for TAT strategy provides a solution to the game, but rather that, if actor A cooperates in the first move, this sends to B the signal that, if he cooperates, A

will likely go on cooperating in the following moves. In other words, Axelrod introduces implicitly the cognitive dimension of rationality beside its instrumental dimension: the players have cognitive reasons to prefer cooperation.

7. AT THE ROOT OF "ANALYTICAL SOCIOLOGY"

In a word, it can be shown that many sociologists from the classical to modern time have followed a paradigm defined by three major principles: methodological singularism, methodological individualism and the cognitive equilibrium principle. It states that the causes of individual actions and beliefs lie in the reasons people have to endorse them. More precisely, people endorse some representational or normative belief if they have the impression that their belief is grounded on a system of reasons that appears to them as better than any alternative system of reasons. As to their actions, they include always beliefs.

Further topics would need an elaboration that I cannot undertake here: that most beliefs are context-dependent, but aim at being context-free. Or that representational as well as normative beliefs aim ideally at being context-free.

I would also claim that, given its strength, the paradigm defined by the three major principles methodological singularism, methodological individualism and the cognitive equilibrium principle has been more or less clearly identified in the history of sociology under various names: "comprehensive sociology" (Weber), "middle range theory" (Merton), or today "erklärende Soziologie" (H. Esser) and "analytical sociology" (P. Hedström et al.). Pawson (2009) has convincingly shown that the paradigm described by those three principles disentangles the meaning of "middle range theory".

These remarks confirm, as Helga Nowotny (2011-2012) suggests, the relevance of Michelle Lamont's definition of epistemological styles, "as a preference for particular ways of understanding how to build knowledge, as well as beliefs in the very possibility of proving those". "In her study of evaluation cultures in the social sciences and humanities, comments Nowotny, she [Lamont] identifies a comprehensive, constructivist, positivist and utilitarian style. The comprehensive style is the dominant one, but typically the humanities shun the positivist and utilitarian ones" (ibid., p. 1053). Of course, other definitions of cognitive styles exist as do similar studies on the natural sciences. Nevertheless, it is a good starting point of recognizing the – also changing – prevalence of cognitive or epistemological styles". I would simply add that, if the comprehensive style is the dominant one, this is not without reasons.

I would even go further: the three-principle paradigm defines a particular type of sociology, the type of sociology that can be qualified as "scientific" in the sense that it proposes to explain any puzzling social phenomenon by making it the outcome of a set of not-puzzling laws and of factual statements. Now, explaining puzzling phenomena by making them the outcome of a set of not-puzzling laws and of factual statements is also exactly what any physicist, biologist or astronomer does.

All sociologists have obviously not followed and do not follow this paradigm. I have evoked the contrast between the implicit conception of sociology that Weber, Durkheim and many modern sociologists, as the few I have mentioned, illustrate and the holistic conception illustrated by Le Bon, or today Ulrich Beck or Zygmunt Bauman. Beside these two main types of sociology, several others could be listed, including the one I proposed myself in my inaugural lecture before the Academy of European Sociology (Boudon, 2001), where I identify three main types: explanatory, cameral and critical. Other categories could obviously be identified. There is an often-fascinating descriptive sociology that, as stated by Runciman and Nedelmann (Commentaire, 2011-2012), explains that sociology can be closer to an art than a science. There is a critical sociology that tends to look for theories useful to some social category or political cause. There is a theoretical sociology canonically illustrated by Parsons' Theory of social action or Lazarsfeld's theory of empirical action, the core of which is represented by a reflexive approach of sociological works that attempts to identify the criteria responsible for the fact that some work appears as more or less convincing. There is a sociology that appears as impregnated by scientism (rather than by the scientific ethos). Structural sociology, memetics or sociobiology, not to speak of the type of sociology that sees itself as an appendix of the neurosciences illustrate Lamont's positivist style: they have in common to suppose

that human behavior is the effect of "material" causes, i.e. of social, psychological or biological causes that, as the causes of digestion, would exclude any intervention of the human mind (Boudon, 2012 a, b and c). As Erner (2006) has brilliantly shown, French sociology of the 1970-1990's owes its special flavor to the fact that it was mainly "critical" in the sense that it aimed at inspiring compassion by making delinquent behavior or school dropping out the effects of social domination. Finally, a residual category can be identified: wordswords-words sociology. On the whole, contemporary sociology gives the impression of being highly diverse. Unfortunately, this leads many handbooks to present sociological theories more or less as opinions and for this reason to juxtapose them as in commercial catalogues. The interest for "analytical sociology" is the symptom of the growing feeling of discomfort this situation arouses and of the consciousness that sociology can be and has been in many of its productions as scientific as other disciplines.

I have the impression though that the handbooks on "analytical sociology" insist on secondary technical details and fail to identify clearly the common paradigm that underlies many illuminating sociological works, i.e. the paradigm that I have tried to identify as grounded on three principles: methodological singularism, methodological individualism and the cognitive equilibrium principle.

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