The Epistemology of Beliefs in Boudon's Sociology
From the Social Subject to the Evolution of Politics, Morality and Religion

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I- The epistemology of beliefs in Boudon's sociology

Epistemology is understood here in its broadest sense, as Raymond Boudon does, from his earliest writings to his latest works (Boudon, 2012, 2013). It pertains to the evaluation of any belief or knowledge to determine whether its endorsement by the social subject is justified and legitimate (Pouivet, 2013, pp. 17-18). In France, the term epistemology is often used in a much more restrictive sense. Since Bachelard, it has been reserved for a certain kind of philosophy of the natural sciences. As a result, political, moral, and religious beliefs are often discredited from the outset. They are declared out of scope a priori because they do not belong to the physical or biological sciences. The broader international definition is the one advocated by Boudon. For him, there is continuity between all areas of human adherence: natural science, but also rules of law or religious faith. In all cases, the individual believes that "an apple falls once it is detached from the tree" (natural science), "a red light means we should stop" (rule of law and conduct), or "our life continues (or not) after death" (faith). In all cases, the sociologists must take these beliefs and knowledge seriously. They need to understand their epistemological foundations, especially from the point of view of the observed subject.

Does this mean that we should assimilate all beliefs? Certainly not. Boudon carefully distinguishes between individual and then collective beliefs. He also separates, to better bring them together, descriptive and normative beliefs: the former are about the "true", and the latter are about the "right". These categories have their importance: natural sciences are about the true, whereas politics or morals are about the right. But the dividing line is more subtle: Is religion about the true or the right? Here, once again, let's take the notion of belief in its broadest sense, to grasp the whole picture. Following Kant, we can also distinguish between different kinds of beliefs: knowledge, opinion and faith (Cuin, 2022, pp. 34-35).

- Knowledge: is objectively sufficient to achieve certainty for everyone. For example: “The battle of Marignano took place in 1515” or “2 + 2 = 4”.
- An opinion: does not have this solidity. For example: “X is the best candidate for the next presidential election” or “Reducing working hours for some creates jobs for others”.
- Faith: is subjectively sufficient to achieve conviction among those concerned. For example: “Something in us will outlive us” or “God exists”.

Ultimately, in all cases, the subjects have their reasons for holding and sharing their beliefs, until there is evidence to the contrary that would challenge their personal convictions, or even shared certainties.

This is therefore the thread we propose to draw from Boudon’s work. Taking an interest in beliefs and their epistemological foundations seems crucial for the sociologist. First, because beliefs induce our actions. Second, because our beliefs are anchored both objectively in a context, and subjectively in our reasons. And finally, because human history seems to be largely shaped by the evolution of our collective beliefs.

This is the journey we seek to retrace:

- First, by focusing on the social subject and its multiple, more or less shared beliefs;
- Then, by examining how the evolution of shared beliefs illuminates our common history, especially in its political, moral, and religious components.

II- The role of neo-Kantian theory of knowledge in understanding the social subject and its beliefs

This section highlights the importance of the Kant-inspired theory of knowledge in Boudon’s sociology, from the foundations of methodological individualism to the cognitive sociological analyses of the beliefs and values of social subjects (for a detailed overview of the sociologist’s work, see Morin, 2020). Boudon’s form of neo-Kantianism, following in the footsteps of the great founders of the methodological individualism to whom he refers, in particular Max Weber and Georg Simmel, can be seen as the cornerstone of his sociology. It is central to his conception of the workings of human thought, underpinning both his articulation of an “understanding” sociology with methodological individualism, and the methodological continuity of his approach to all forms of thought, ordinary as well as scientific, to all kinds of ideas, whether judged correct or dubious or false, and to different kinds of beliefs, whether descriptive (also known as positive) or normative (also known as prescriptive). We aim to elucidate these relationships, emphasizing their implications for the notion of causality, the treatment of

consciousness and unconsciousness concepts, and the symmetry of Boudon's interpretation of descriptive and normative beliefs.

1/ Generalized Kant: expanding and layering the "a priori" of knowledge

In particular, Boudon retains two main ideas from Kantian philosophy. The first is that knowledge requires the application of interpretive cognitive tools: the "a priori". The second is that the interpretive nature of knowledge is also the basis of its validity: The notion of truth, like that of knowledge, depends on mediated access to reality through structures of meaning. Boudon credits Simmel with being the most explicit about the fact that truth and objectivity are accessible to the knowing subject not, as he writes, although, but because knowledge always expresses a point of view (Boudon, 1990, p. 57). In this respect, however, it is essential to understand the consequences of the neo-Kantian generalization of the Kantian "a priori", which does not possess the universality or fixity of the Kantian categories of knowledge, and even relativizes their a priori status. Simmel (1905/1907) expresses this generalization in a passage from *Problems in the Philosophy of History* - a work translated into French by Boudon (1984a) - where he discusses the inadequacy of the Kantian a priori to explain the possibility of subjective experience itself. He concludes that the Kantian a priori, which "makes experience possible in general," represents only the highest element in a series whose terms, which can be expressed in the form of propositions, refer to relative levels of abstraction. In relation to the higher terms, the elements of this series appear empirical, but in relation to the lower terms of the series they appear a priori. Simmel notes that this generalization (and, we might add, relativization) doesn't change the function of the a priori itself, only its content. At various levels, a priori constructs serve an enterprise of selection, connection, and arrangement of data derived from experience in relation to the next level. This process contributes to their very power of shaping and applies to entire fields of knowledge.

To fully understand the epistemological and cognitive implications of Kantian and neo-Kantian developments in the theory of knowledge, we must remember that the associationist psychology of classical empiricism treats all ideas as merely combinations of elementary sensations, without differentiating ideas from their foundational sensations. As a result, it can have been relayed by 20th century behaviorism, where reference to the contents of consciousness disappears because, as William James explains, in associationism, ideas are treated just as "things" that the mind binds together (James 1890/1950, p. 554). In contrast, with Kant, the activity ascribed to the knowing subject implies the attribution of meaning to

experience, which, in turn, brings the contents of consciousness to the fore.

Recognizing both the sensory foundations of knowledge championed by the British empiricists and the type of rational knowledge of the Continental rationalists, Kant posited that our knowledge comprises two parts: one empirical, derived from our sensory faculties, and the other theoretical, derived from our rational faculties. It is because each of us brings a non-sensory meaning to the sensory information we perceive, that an intersubjective space of beliefs of all kinds, both descriptive and normative and, within the former, whether scientific or not, is possible. However, the activity that Kant ascribes to the knowing subject refers to laws of thought shared by all individuals. In this respect, Kant's solution introduces two types of a priori categories of knowledge: the a priori forms of sensibility (external intuition—space and internal intuition—time) are the necessary conditions for all perception, while the "a priori categories" of understanding (quantity, existence, causality, etc.) serve to organize our sensory experiences, converting them into meaningful knowledge. Kant saw the theoretical component of knowledge as categorical and necessary, and not, as is the case, merely hypothetical. Given their a priori status, in an absolute sense independent of any particular experience, the uniformity of categories is deemed necessary, otherwise our experiences of the external world would be radically different. However, this universal basis for the activity of knowledge can hardly explain the great divergences in beliefs among human groups (see Filmer Northrop 1966, chap. 5, which highlights Kant's contributions and limitations on these issues).

On the moral level, Kant's unitary conception of the moral law, which mandates individuals to act solely based on principles that can be universalized, has similar limitations due to its generality. On the normative level, however, Kantian moral law expresses the condition of possibility of social life. Boudon (1999, p. 59) explains that Kant sees the origin of normative beliefs in the binding principles of practical reason, analogous in this respect to the a priori that make descriptive beliefs possible. There can be no viable society without rules that ensure the coexistence of individuals and that are potentially accepted by all. Such rules apply to all only if they ignore the interests of each individual. This perspective contrasts with utilitarianism and supports Weber's distinction between instrumental and axiological rationality. But, just as the a priori categories do not account for the variety of descriptive beliefs, the submission of subjects to the moral law does not account for the contextualization of their thinking. It does not address their specific moral feelings, nor does it consider the positive commitment inherent in Boudon's notion of moral feeling. It does, however, have the great advantage of arguing that the human beings have the capacity "to lay down principles, to self-assign values, and to draw up programs, albeit vague at the outset, that gain clarity through realization" (Boudon, 2007, p.

30).

2/ From neo-Kantian theory of knowledge to methodological individualism

The generalization and relativization of the Kantian a priori into stratified systems of concepts, beliefs, propositions, etc., within the neo-Kantian framework "à la Simmel," is fraught with implications for sociological understanding. In particular, there is an intrinsic link between the neo-Kantian epistemological approach described above and methodological individualism (MI), which, as Boudon repeatedly reminds us, rests on three pillars:

1/ Individualism: The analysis should be traced back to individual behaviors responsible for a social phenomenon;

2/ Understanding: The analysis should make it possible to understand these behaviors in terms of the actors' reasons for acting in their situation;

3/ Rationality: Social actors generally have good reasons, personal and/or impersonal, for acting as they do.

From the outset, it is clear that "individualism", which only requires reference to individual behavior, should not be confused, as is often the case, with "methodological individualism", which includes all three pillars (individualism, understanding, rationality). Especially, MI's assumption that human action is driven by subjective meanings sets it apart from any attempt to naturalize the human subject. Boudon (1984b, p. 40) formalizes the general structure of the MI explanatory model as follows:

> "Let us consider any social or economic phenomenon, M, that we are trying to explain. M must be interpreted as a function M(m_i) of a set of individual actions m_i . As for the individual actions m_i , they are themselves, under conditions and in a manner to be specified, functions m_i (Si) of the structure Si of the situation in which the agents or social actors are found. The function (in the mathematical sense) m_i (Si) must be interpreted as having for the actor *i* a function *of adaptation* to the situation Si. Weber would have said that the action m_i must be *understandable.* The structure Si is, on its side, a function Si(M') of a set M' of data defined at a macrosocial level or at least at the level of the *system* inside which the phenomenon M develops. Explaining M is, in short, according to this general paradigm [Methodological Individualism], specifying the terms of M = M {*m*[S(M')]}".

In the stated equation, the "function" mi(Si), which conveys how individuals subjectively "adapt" to their situation, implies the three pillars above in the light of neo-Kantian epistemology. Their interpretive activity, at the source of their action, is mediated by structures

of meaning involving their own cognitive and social resources and the differentiated contexts in which they are embedded (see, for example, Boudon, 2012, p. 236). This implies individualism. Moreover, these structures, which underlie their interpretive activity by accounting for the construction of meaning, lead to the postulate of understanding - a common premise of both neo-Kantianism and Kantianism is the unitary nature of the foundations of human though. Finally, while the intervention of irrational idiosyncratic factors is acknowledged, the postulate of rationality is intrinsically tied to the prior two, through the notion that individuals' interpretive activities justify their reasons (both personal and impersonal) for acting as they do.

The significance of the neo-Kantian theory of knowledge in MI is revealed in Boudon's assertion that one cannot truly understand the Simmelian notion of form without recognizing its "organic" connection to methodological individualism (Boudon, 1984a, p. 12), since these forms, as organizing structures of knowledge, express the German philosopher and sociologist's neo-Kantian stance. They embody the relatively persistent and socially shared - institutionalized - nature of various kinds of "a priori" of meaning, inviting us to explain social phenomena in terms of the "mental" dimension of individual actions. Boudon identifies the roots of this epistemological approach in both Simmel and Weber. He also identifies its premises in the writings of other great sociologists, premises likely to inspire them MI-type analyses, even if they are not among its classical proponents, as in the case of Emile Durkheim. Boudon (2007, p. 211) quotes the Durkheim of *The elementary forms of religious life*, who states that logical thought is only possible when human beings have come to conceive of a whole world of stable ideals beyond their transient sensible experiences. According to Durkheim, the impersonality and stability of these intellectual constructs, which form a public realm and, as Boudon notes, tend towards coherence with reality, confusingly express the recognition that a notion of truth stands apart from sensible appearances. Durkheim's neo-Kantianism is expressed by the idea that, far from hindering access to the truth, the combination of elements of a theoretical nature with elements of a sensitive nature, is a condition for it.

3/ The structure of human knowledge

The conclusions that Boudon draws from the neo-Kantian theory of knowledge for the philosophy of science feed his recurrent critique of the premises of positivism, which, he explains, are based on an untenable principle, namely that scientific knowledge can do without bringing principles into play (Boudon, 2013, p. 41). The discussion of these principles, because

they cannot be justified within the disciplines themselves, is a favorite topic of philosophy: "While they [the positivists] advocated the liquidation of philosophy in favor of the positive disciplines, Simmel concludes that it is eternal, since its existence is the consequence of the very nature of human knowledge" (Boudon, 1990, p. 424).

The implications for normative beliefs, which are supposed to be based on reasoning structured in the same way as descriptive beliefs, are of the same order as for the latter, implying both a multiplicity of possible viewpoints and a form of possible transsubjectivity in judgments. Central to *The Meaning of Values*, for example, is the idea that normative beliefs bring into play a priori's that impose a form of circularity on them, subjecting them to the "Munchausen Trilemma". The latter, formulated by the German philosopher Hans Albert, expresses that the justification of any statement inevitably leads to one of three pitfalls: an infinite regression, circular reasoning, or dogmatism. The arborescent and hierarchical conception of knowledge stemming from neo-Kantianism justifies abandoning the search for ultimate principles, unless they are vague and undefined: In descriptive knowledge, it concerns respecting reality, and in terms of morality, it concerns respecting the human (Boudon 1999, p. 78). In this regard, the principle of dignity serves merely as an overarching guide, whose essence is continuously taking shape or being "realized" (on this principle, see Mesure, 2023). Given this structure of knowledge, justifying normative beliefs requires intricate networks of argumentative systems. Boudon summarizes this in his idea of a rationalist-contextualist approach to moral sentiments (Boudon, 1999, p. 71): "Both practical-ethical certainties and intellectual-theoretical judgments are based on extensive, loosely interconnected systems of reasons" (Boudon, 1999, p. 202), so that value judgments are variable, but they involve principles with potential transsubjective validity:

> "Two systems of equations have different solutions if their parameters are different. This does not mean that the equations are different. The same applies to the contextual variation of value judgments. In all cases, the solution derives from reasons that are binding because they are objective. It differs from case to case, because the context imposes different conditions" (Boudon, 1999, p. 240).

The variability of theoretical viewpoints applied to understanding the human world justifies Boudon's criticism of "monisms" and overarching theories anchored in a unitary explanatory principle, that falsely claim universal applicability. He observes that these monisms share an inclination to naturalize the human subject in an attempt in order to support their foundational principle. In doing so, they wrongly appeal to hypothetical causes of a material nature, such as biological, sociobiological, memetic, structuralist, and culturalist interpretations, among others:

"Materialism is a valid postulate for the sciences of nature, but not for the sciences of man, for the reason that it is realistic in the former case, but not in the latter. It is realistic to see the natural world as the effect of material causes, and superstitious to see it as the effect of final causes. In the human sciences, the terms of this relationship are reversed." (Boudon, 2008b, p. 18).

4/ Subject model and concrete subject

In Weber's understanding sociology, broadly endorsed by Boudon, the ideal-type serves as a conceptual model that simplifies and accentuates certain features of a social phenomenon for the heuristic aims of analysis and comparison (i.e., bureaucracy, the ethic of conviction, etc.). From the outset, the ideal-type is consistent with an epistemology based on the construction of interpretive hypotheses. Its relationship to observable reality can be deemed correlational, provided that "correlation" here bridges two distinct realms: the theoretical and the empirical. This correlational nature underlies Weber's concept of empirical or causal adequacy, which complements the requirement of adequacy in terms of meaning, referring to the postulate of understanding.

The hypothetical nature of the ideal type, along with its heuristic function, illuminates the relationship between the rational processes postulated by the explanation and the subjective experience of individuals. In particular, Boudon's references to this experience in no way imply that the subjects are in complete mastery of their ideas. What may strike the reader is Boudon's allusion to the "immediate data of consciousness," especially given his limited references to phenomenology. This is further compounded by his frequent recourse to the concept of "feeling" to describe their experience. Boudon evokes "perceived reasons," "feelings," and the "impression" that something is right or compelling. In this respect, both descriptive and normative beliefs are not only interrelated, but also "experienced" in similar ways. For example, when we experience indignation at a criminal act, we have the impression that the act is objectively bad, not that we feel so out of personal appreciation, as Boudon explains (Boudon, 1995, p. 34). He further notes "It's not because values are experienced as well-founded that the individuals clearly discern the underlying reasons. More often, they grasp them intuitively and emotionally" (Boudon, 1999, p. 12).

This view of the subjectivity of the social actor and its relation to experience is close to Weber's perspective. In the first chapter of *Economy and Society*, Weber explains that the conceptual constructs of sociology are ideal types not only from an objective point of view, but

also when applied to subjective processes, since most actions in the real world often take place in a state of semi-consciousness, or even unconsciousness, of their "intended meaning": The actor typically has a vague "feeling" of this meaning rather than an understanding or knowledge of it, and actions often arise from impulse or habit. Weber points out that this should not prevent sociology from constructing its concepts on the basis of a classification of possible types of "intended meanings", as if actions were consciously oriented towards meaning. It is therefore crucial to distinguish between the theoretical, rational model of a social actor, which may elucidate implicit, or "metaconscious", beliefs and arguments for explanatory purposes, and the actual lived experience of the individual.

5/ "Conscious" and "metaconscious"

The concept of the metaconscious, borrowed from Friedrich Hayek (1978, chap. 17), allows Boudon to distinguish references to mental processes rooted in implicit knowledge from hypotheses involving unconscious processes supposedly at odds with conscious motivations, as found in Freudian theory (Boudon, 1990, p. 110). In reality, the ends and means of action are always partly conscious and partly metaconscious. Whether in routine daily actions or in more deliberate activities such as scientific research, we rely on various representations and propositions that are not immediately at the forefront of our consciousness. We take these propositions for granted, which is why they remain implicit (Boudon, 1990, pp. 423-424). In this respect, the implicit represents an essential component of social interaction (Boudon, 1990, p. 13). But, if we accept the continuum between the conscious and unconscious, drawing a definitive line between the two may not offer significant explanatory insight. This is reflected in the analyses of Simmel (1905/1907), who considers that attributing an act to an unconscious motivation is merely an articulation of our ignorance of the true motive. The theoretical model of the social actor selectively simplifies the content of thought that is most relevant to explanation, without concern for each actor's full mastery of the meaning of their action. As Simmel explains in Problems, this leads to the adoption of a "strangely fictitious" psychology, which he describes as "abstract". In this model, Figure 1 represents the individual's cognitive relationship with the external world.

Precisely because the neo-Kantian "a priori" implies a stratification of knowledge, with more abstract knowledge underpinning an activity of connecting more concrete knowledge, as illustrated especially by Boudon's metaphor of "points of view," the "perspectives" implied by the connecting activity itself tend to escape the subjects' consciousness. Simmel points out in

Problems that Kant, in fundamentally separating a priori from empirical knowledge, did not fully recognize the extent to which forms of connection unconsciously dominate the data of the external world.

Here it is important to understand the unique status of both Simmel's concept of the unconscious and Boudon's metaconscious, which regardless of their experiential reality at the fringes of consciousness, refer to mental processes of meaning construction. This is why Boudon rejects the notion of psychic "forces" beyond the control of subjects. Again, such "control" doesn't necessarily involve their conscious, reflexive activity, but the meaningful mental activity that drives them. This activity is rooted in the whole stratified structure of a priori, admittedly more or less conscious, but implying the epistemological involvement of "final causes", motives or reasons.

6/ Rationality of false beliefs

The neo-Kantian theory of knowledge, along with the specific problem of the relationship between the conscious and metaconscious dimensions of thought, forms the backdrop to the various theses that Boudon puts forward to explain the subject's rational adherence to dubious or false ideas, as explored in works ranging from The *Analysis of Ideology* to *Montaigne's Spinning Wheel*, and including *The Art of Self-Persuasion*.

The neo-Kantian approach to knowledge presupposes an activity that becomes increasingly "meta-conscious" the more fundamental or abstract the a priori involved, especially when they are widely shared. As Simmel discusses in *Problems*, our consciousness focuses more on the external data it processes than on its own inner activity. This focus becomes even more pronounced when a priori propositions of a more universal nature are applied to various contexts, leading to a sense of familiarity and apparent self-evidence that makes them less noticeable. Often, this meta-conscious nature is overlooked in explanations. In some cases, however, it can, as such, explain the adoption of questionable or false beliefs. Importantly, this does not undermine the postulate of rationality because these ideas result from the same processes that meaningfully produce "right" ideas. The cognitive role of the a priori in the process of knowledge acquisition can thus explain why individuals adhere to false beliefs, in a manner parallel to their adherence to true ones. As Boudon notes, "From the moment that these a priori lose their universal and unchanging character and approach what Popper calls

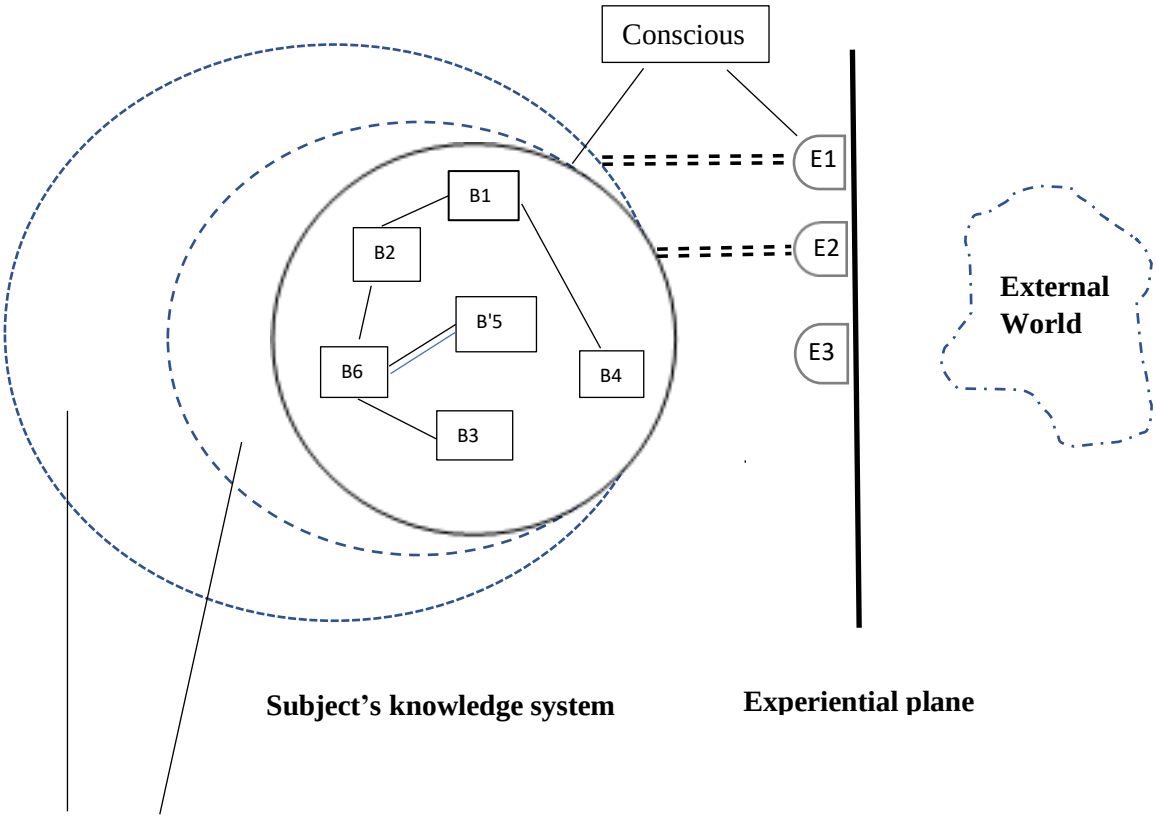
conjectures - and what sociologists prefer to call frames - they can indeed easily create an illusion" (Boudon, 1990, p. 57).

Boudon (1986) explains the phenomenon of ideology in terms of the typical processes of adherence to beliefs, involving both "positional" effects, which imply a specific social experience depending on the social situation of the actors, and "dispositional" effects, which imply the mobilization not only of experience but also of previously acquired and internalized knowledge, just as, he points out, a student internalizes the Pythagorean theorem: These are metaconscious dispositions that contribute to a meaningful understanding of the world. In *The Art of Self-Persuasion*, Boudon bases his analyses of misconceptions in philosophy and the human sciences on Simmel's intuition, set forth in *Philosophy of Money*, that the stratification of knowledge can lead subjects to draw valid conclusions from reasoning without realizing that these conclusions stem from the premises they are metaconsciously applying:

> "If we want to think about the immense number of presuppositions on which the content of all knowledge depends, then it does not seem to be out of the question that we can prove a proposition A by B, but that B, through the truth of C, D, E...etc., can ultimately only be proved by the truth of proposition A. It is only necessary to admit a sufficiently long chain of argumentation - C, D, E, etc. - so that the return to the starting point escapes consciousness, just as the size of the earth hides its spherical shape from immediate view, and creates the illusion that we can progress infinitely in a straight line." (Boudon, 1990, p. 103).

Finally, the fact that all scientific knowledge rests on principles that are fundamentally unprovable and can only be validated through long-term application presents a challenge that, as Montaigne wrote, "puts us in a spinning wheel" and explains the persistence, at least in the short and medium term, of fragile or false beliefs that occupy a significant place in the public arena, such as astrology or certain conspiracy theories.

Figure 1: Overview of the subject's cognitive relationship to
the external world in Raymond Boudon's theory of knowledge



Metaconscious: diverse, intricate, levels of cognitive "a priori" of a linguistic, logical, epistemological, prescriptive or other nature, and other implicit elements of the subject's knowledge.

Bi: Beliefs, propositions, arguments of a descriptive nature

B'i: Beliefs, propositions, arguments of a normative nature

Ei: Elements of the subject's experience of the external world

==== : Cognitive links between normative and descriptive beliefs

= = = : Links between the subject's knowledge system and his or her more immediate cognitive experience of the external world

III - Evolution of beliefs and political, moral and religious thought

1/ Evolution of beliefs: a process of "diffuse" rationalization

We have just evoked the transition from individual to collective beliefs. These collective beliefs seem to dynamically carry our shared history. The challenge is to understand how this happens. To elucidate this evolution, Boudon borrows Weber's notion of 'diffuse rationalization' (*Durchrationalisierung*), which allows us to explain the emergence of long-term trends that become almost irreversible.

Looking back through history, it becomes evident that beliefs once deemed self-evident can no longer be taken for granted today. Tocqueville is astonished that Madame de Sévigné, an elegant, pious and tactful woman of the 17th century, who boasted in her correspondence of the great pleasure she derived from witnessing a particularly cruel capital execution (Boudon, 2012, p. 2). It's true that some people today try to film gruesome scenes on social networks, but this is done clandestinely and no longer has the status of a matter of course, but rather that of a scandalous transgression. Fortunately, slavery has been abolished, a practice that didn't shock Seneca in antiquity or even Montesquieu in the 18th century (Boudon, 2008a, p. 122). Admittedly, it is still practiced in some countries, but covertly and with broad condemnation. For millenia, our ancestors believed that the earth was flat and that the sun revolved around it. Granted, 7% of the world's population still believes this. But everyone else knows it is wrong. The challenge now is to enlighten this small but significant fraction of the uninformed. That is over five hundred million people out of a total population of eight billion.

So, how is it that these world-driving beliefs evolve over time? So much so that we seldom encounter official advocates of cruel punishments such as quartering, the practice of slavery, or the notions of a flat and central Earth? This process of rationalization can be articulated in two phases (Boudon, 2008a, chapter 5 on "normative progress"). The first phase is one of innovation: a novel idea emerges, that competes with the multitude of pre-existing beliefs. For example, what if every human being has an inherent dignity that should be respected? What if there is a single, transcendent God? What if the earth is spherical and rotates within a galaxy? What if the separation of powers protects against excessive absolute power? The second phase is one of rational selection: through debate, examination, trial and error, certain ideas gain acceptance and a growing number of believers, while others fade into obscurity. In the long run, this permanent decantation takes place: innovation-rational selection.

This process is reminiscent of Darwin's selection of species, which also operates in two stages to account for biological evolution. However, we must not confuse the neo-Darwinian mechanical process with the neo-Weberian rational process. In the neo-Darwinian model, a first stage may be environmental change, and a second, species adaptation through genetic mutations and natural selection. For example, in biology: 1) if a climate change causes trees to have only high-perched leaves, then 2) only long-necked animals like giraffes will survive and reproduce. Others will perish. This sequence-environmental change followed by species adaptation is ubiquitous in biology. Examples range from the tuskless elephant, which better evades poachers and thus has a higher survival rate, passing on its once-defective but now-protective genes, to the gray butterfly, which better camouflages itself in polluted air, avoiding predators and thus ensuring its survival and that of its offspring. This approach works less well in sociology. Consider the following: 1) since capitalists, as predators, lay off workers to increase profits by using only machines without the burden of wages, then 2) since labor is the only source of wealth, profits will decrease and the capitalists will dig their own grave. This is a well-known explanation by Marx, often presented in a very Darwinian light, depicting an economic landscape of predators and prey (Boudon, 2008a, p. 74). But despite - or perhaps because of - the application of the Darwinian model, this theory falls short. Moreover, capitalism continues to flourish. Thus, the Darwinian process of environmental change followed by adaptation does not translate seamlessly into social contexts, such as the roles of capitalists and workers. It is more appropriate for natural phenomena like giraffes, elephants or butterflies.

On the other hand, it is the rational process - consisting of innovation and rational selection – that best explains social phenomena. For example, if the new idea among capitalists is to replace humans with machines or artificial intelligence, this idea will inevitably meet with significant resistance, in part because of the looming fear of unemployment. But the idea will also find supporters. They might argue that machines actually create the jobs to make them; another point in their favor might be that machines often replace tedious tasks, allowing them to be performed more efficiently. In short, we can see how, over a long period of time, this innovation-selection process can lead to the rejection or adoption of an idea, by more and more people who support and trust it.

Boudon carefully distinguishes: On the one hand, what happens in the long run, with this process of rationalization, where, in the end, good ideas drive out bad ones; on the other hand, what happens in the short run. In the short run, "the diffusion of ideas obeys two fearsome sociological laws" (Boudon 2012, p. 37). First, a group outside the original transmitters of a new idea adopts it in a way that seems directly useful to them. Second, "the diffusion of ideas

is often accompanied by undue simplifications" (ibid.). It is difficult to prevent lobbies and interest groups from appropriating these new ideas for their own benefit. Similarly, it is nearly impossible to prevent these ideas from being reduced, summarized, and oversimplified. But these short-term challenges should not obscure the broader reality: In the long run, you cannot fool everyone everywhere with superficial slogans and fragile or false ideas. In the end, discernment prevails. In his last, posthumous, work, *Montaigne's Spinning Wheel* (2013), Boudon warns that this long-term optimism does not provide full reassurance. The damage done by misguided beliefs can be profound, even catastrophic, during their prevalence, and persist until they are discredited enough to leave the "ideological" scene.

In France, Boudon primarily criticizes the flawed pedagogical theories that have led to the deterioration of teaching. He supports Nathalie Bulle's (1999) comparative study of the trajectories of the French and American educational systems, which are undergoing similar drifts, albeit with a time lag. Boudon's second thought concerns bad theories of delinquency that have led to a deterioration of security. He enviously refers to good criminological theories, such as those of Maurice Cusson in Canada. While it is reassuring to believe that in the long run things will inevitably improve after worsening, the interim damage, while temporary, cannot be overlooked. It is still too lasting for those who no longer have the time to wait for better days. They legitimately feel that their generation has been shortchanged, as if they were born at an inopportune time. It is not that there is some orchestrated "conspiracy" at play - instead, it is a process of rational selection from a plethora of reasons. But this selection is regrettably slow in fostering sound collective beliefs, especially in the face of those who suffer the tangible damage caused by bad ideas that are not discarded quickly enough.

In certain formulations of the rationalization process (Boudon, 2008a, 2012), the author introduces an upstream and a downstream to the phases already presented. This aids in pinpointing factors that either facilitate or obstruct the process. Upstream, there is often a broad program that sparks new ideas. As a result, these ideas tend to surface when the conditions are conducive, even if they are already part of the zeitgeist. The aspiration for greater recognition of human dignity is a prime example of a program of this scope. Following Weber, Boudon traces its origins back to the epistles of Saint Paul. Once this expansive initiative was set in motion, subsequent innovations built upon it through the ages, leading to the contemporary interpretations of human rights that may still be subject of further refinement. Downstream, certain "historical forces" can thwart this evolution. Unfortunately, we know that civilization is periodically threatened by a resurgence of barbarism. Sometimes, the very emergence of new

ideas can lead to misleading simplifications and perilous misappropriation. There is no point in giving examples here, for they are so numerous.

The process of rationalization that accounts for the collective evolution of our beliefs is not to be confused with immutable progress or systematic decline, and even less with a so-called "law of history" driven by an unyielding determinism. Rather, they are oriented trends underpinning a social phenomenon, which may gain or lose momentum, depending on the context. In his last book published in his lifetime, *Believing and Knowing* (2012), the author also emphasizes the ongoing tension between instrumental and axiological reasons in the selection of ideas, a preamble to the collective evolution of our beliefs. Individually, already: I want to protect the environment but find sorting garbage tedious; I am looking forward to retirement, but it would be nice to pass on a balanced budget to the next generation and therefore work a little longer; I am inclined to support political candidates whose programs are in the right direction for everyone, as long as their policies do not disadvantage me personally; and so on. The aggregation of these myriad personal motivations, torn within each individual between interests and values, given the right mix and context, gradually leads to the emergence of collective proposals that are likely to gain widespread support and thus become deeply held beliefs for a long time to come. This encapsulates the comprehensive rational process of idea innovation and selection, and sheds light on the collective evolution of our beliefs, our institutions, and even our shared history.

2/ Application to moral, religious or political phenomena

The overarching process of rationalization, as elucidated by Weber and others, illuminates Joseph Schumpeter's insights into economic evolution as well as Thomas Kuhn's perspective on scientific evolution. In his later works, Boudon chose to focus his analysis on moral, religious, and political phenomena. To him, these phenomena seemed even more enigmatic than the others. As a result, the challenge of deciphering them and understanding their evolution seems great.

For his study of the evolution of moral sentiments in the context of globalization (Boudon, 2012, chapter 4), Boudon draws on the World Value Survey, which has undergone five waves of measurement over forty years: 1980, 1990, 2000, 2010, and 2020. For the data from the 1990s, he selects seven Western countries: France, Germany, the United Kingdom, Sweden, Italy, the United States, and Canada, as well as three countries that are more remote in this realm of values: Turkey, Russia, and India. He examines responses related to one's sense of

right and wrong, perceptions of authority, trust in various institutions, and levels of tolerance. Tolerance is measured based on acceptance or rejection of neighbors characterized as: immigrant workers, members of different ethnic groups, Jews, Muslims, homosexuals, people with AIDS, emotionally unstable people, drug addicts, or alcoholics (Boudon, 2012, pp. 139-146). In testing his explanatory model, both statically and then dynamically, by comparing the responses of the younger and older populations within each country, Boudon achieves conclusive results. First, responses seem to be driven more by principle or knowledge than by self-interest. To illustrate, individuals might tolerate emotionally unstable, potentially disruptive people because they understand that it is not their fault. Conversely, they might be less tolerant of an alcoholic who is equally annoying, but whom they perceive as responsible for their addiction. Hopefully, there seems to be a trend toward decreasing racism and homophobia, although Russia seems to be an exception. Second, the evolution of responses between young and old - which is further confirmed by analyzing successive survey dates - indicates a convergence, even for the three countries that were initially considered as a priori different. Across the board, people are increasingly rejecting blind obedience to orders without understanding and agreeing with them. There remains a clear demarcation between what is considered just and unjust, tolerance of difference is on the rise, and so on. These trends can be seen over time, although they have progressed at different rates depending on the country.

These results validate Boudon's explanatory model. What is more, they enable him to refute the popular yet flawed theories about "postmodern" globalization, which would plunge us into a society of "risk", where everything would be "liquid", leaving individuals lost, deprived of all reference points. The opposite is true: young people in England, France, Germany or Russia hold highly structured personal values. They might not always recognize that these values are the collective result of a long, gradual process of rational sorting of ideas, but they certainly have firm convictions. Importantly, they often prioritize principles even if they occasionally conflict with their immediate interests, if the context permits. For instance, while some are committed to material growth, others lean more towards ecological and social progress. Some are deeply patriotic but still see themselves as citizens of the world, while others identify as cosmopolitan from the outset. In any case, this is a far cry from the unpredictable fluctuations of the so-called "liquid" globalization championed by some theorists who are unfortunately very much in vogue.

For the evolution of the relationship between religion and the state, commonly referred to as "laïcité", Boudon (2012, chapter 5) focuses on the case of France, especially as the country celebrates the centenary of its 1905 law on the subject. His demonstration is devastatingly

incisive. Currently, the French have based their interpretation of secularism on a flawed system that is doomed to fail. It is time for them to embrace a more viable long-term model. At the heart of the current system are two misjudgments. First, the philosophy of the Enlightenment, epitomized by figures like Rousseau, seeks to replace traditional religions with a kind of civic religion that elevates the republic to the status of a "supreme being." Second, Comte's positivism seeks to replace religious belief with science, while maintaining a structure reminiscent of the Catholic Church. All this has produced nothing but tension and failure. You do not change beliefs by decree or revolutionary force. The core of the system that would be more promising is also twofold. First, with Tocqueville (1835), we must admire the American flexibility of a modern and religious country, where the decentralization of both the state and the religions allows local adjustments to be made without escalating conflicts between church and state. This prevents such conflicts from reaching a national impasse, a recurring problem in France. Then, with Durkheim (1912), religious believers must be taken seriously. They have their own reasons for believing. This should be respected, even if we do not share their faith. It is therefore misguided to dismiss them as heirs of ancient superstition or as deluded individuals in need of enlightenment. From Boudon's perspective, the tensions of the past two centuries have prevented a process that has spanned several millennia from unfolding harmoniously. Other countries seem better positioned to foster a more constructive form of secularism. Unusually, Boudon's argument here is supported entirely by French sources. He omits to mention Marx's characterization of religion as the "opium of the people" in negative theories, or Weber's powerful explanations in examples of sound theories of religious belief.

Regarding the political evolution of the consideration of popular sovereignty in representative democracy, Boudon (2012, chapter 6) for once criticizes a sociological predecessor he usually admires the most: Tocqueville (1840). Tocqueville was concerned that universal suffrage in a representative system could lead to a "tyranny of the majority". By winning only 51% of the vote, a party could oppress 49% of the population throughout its term in office. As a member of parliament and later as a minister, Tocqueville proposed a system of "intermediate bodies," in the form of associations, to balance the interests between individuals at the bottom and their representatives at the top. In the 21st century, this leads to calls for a more "direct," "deliberative," and "participatory" democracy. All of these terms amount to challenge representative democracy and entrust popular sovereignty to more local, decentralized, grassroots bodies. While the idea is appealing, Boudon finds it dangerous. Local budgets may be safely managed by a neighborhood committee, but perhaps not national defense, the future of pensions, or the ecological transition. Our author calls on two sociologists

who, in his opinion, are not used enough to warn against this. According to Robert Michels, any party left to its own devices, no matter how self-managing and egalitarian, is a machine for creating an oligarchy. It is the active partisan minorities that become tyrannical, and not the majorities, which often remain silent and passive. The second author, Mancur Olson, explains why. In unorganized large groups, everyone tends to benefit from the collective strength while minimizing their contribution, hoping to be able to count on the others without this passivity being noticed. But because everyone thinks the same way, no one does anything. In short, in large groups on common issues, everyone runs the risk of behaving like a “stowaway”; as a result, a motivated minority can take advantage of this inertia, leading to "the exploitation of the many by the few. Boudon’s trenchant conclusion suggests that in a “participatory” democracy, only a few committed lobbyists with vested interests participate in discussions, while the majority remains silent or uninvolved. The central state then adopts the results of this “deliberation” as if it were a collective consensus. On the whole, it is preferable to perfect the existing representative system, the fruit of a great process of rationalization that for centuries has valued respect for the dignity of each individual and the separation of powers. Of course, a majority can win for a while. But this will lead to a change if the results are too disappointing. In any case, we will avoid tyrannies of 20% over 80%, or even 5% over 95%, when effective active minorities infiltrate supposedly “participatory” assemblies. Once again, a false good idea slows down a process that is excellent in the long run: The march toward a democracy in which the people are truly represented.

IV - Back to epistemology in the social sciences

The explanation for moral, religious, or political phenomena put forth is grounded in a precise static and dynamic analysis. This spans from individual reasons to the collective evolution of our beliefs. As we can see, such a method of analysis makes it possible to achieve certain explanatory “breakthroughs” (Boudon, 2012, prologue). It also implies making “ruptures” (Boudon, 2012, epilogue) with rival explanations that are insufficient but influential. In conclusion, it is appropriate to return to Boudon’s epistemology. For him, it is a permanent reflection, no longer on the results obtained, but on how to obtain solid results with maximum guarantees. He often says that we are moving from the shop window of sociology to its workshop.

The “breakthroughs” are due to two sets of principles. The first concerns “sociology as a science” (Boudon, 2012, p. 278). It consists of three principles:

1) The principle of "singularity" refers to the object under observation. For meaningful analysis, this subject must be clearly defined and offer a precise point of inquiry. It may be too much to try to explain all of humanity or all of history at once. Robert Merton (1949) recommended concentrating on "intermediate theories". Montaigne (1595) warns, "I fear we have eyes larger than our bellies, and more curiosity than capacity: we embrace everything, but we clutch at the wind" (quoted in Boudon, 2012, pp. 256-257). Moreover, it is inherently more difficult to locate an object or phenomenon at the macrosocial level than it is to do so at the meso or microsocial level. Put simply, it is often easier to identify a specific group or organization than to characterize a broad social movement. Yet, as we have seen, our author relishes the challenge of delving into such complex issues as morality, politics, and religion.

2) The principle of "neutrality" refers to the observer. A sociologist must set aside personal biases, interests, and passions, for he runs the risk of being blinded by them, of having the answers before the questions. Such premature conclusions are all too common. Instead of starting with the observed phenomenon and tracing it back to the underlying beliefs, then to the reasons, in relation to the context, we often invoke a ready-made explanatory variable - be it social class, gender, ethnicity, or age, among the most commonly cited. This approach mirrors Molière's doctors, who prescribe remedies before making a proper diagnosis. In the realm of theater, the comic effect of an uninformed character repeatedly recommending a solution is undeniable. In sociology, however, this widespread practice of the pre-established leitmotif – "class," "gender," or "age" - is anything but amusing. It often predetermines outcomes and provides only superficial insights. When personal passions or interests intervene, the result is often a denunciation of dominant economic, sexual, or cultural groups, highlighting well-known and real inequalities. To truly delve into explanations, it is essential to start with a clearly defined phenomenon (as per Principle 1) and to adhere to the neutrality (as per Principle 2) advocated by scholars such as Weber and Durkheim.

3) The principle of "methodological individualism" refers to the approach that guides an observer in explaining the observed object, in this case human beings within communities or societies. At its core is the near-postulate that individuals, though constrained, possess agency. Thus, understanding individuals becomes central to explaining collective beliefs and actions. The robustness of an explanation can be judged by its results rather than by its underlying assumptions. But let us remind that ontology inherently refers to the object of study. Consequently, it is admissible to analyze human actions or beliefs differently than we would a stone, molecule, or planet. These objects have different properties. As Weber pointed out, in nature we can only grasp the behavior of objects functionally, and then determine it according

to the rules of their course, with "because" explanations. For example, sick people have fevers because they have the flu. In contrast, social actions are driven by final causes, intentions, or reasons-explained as "in view of" motivations. Patients take medicine with the intention of getting well. They trust the effectiveness of the medicine and the doctor who prescribed it. They hope to regain their health. Conversely, a person's taking of medicine is not caused by temperature, unconsciousness, habitus, or productive forces-in short, by any material cause or functional law. It is a common but fundamental misinterpretation to look exclusively for explanations in the social sciences from such causal perspectives. In fact, the patient just has reasons for wanting to be cured in this way.

The second set of principles details precisely this method, which Boudon refers to in his latest books as the "theory of ordinary rationality". He formulates it in four principles (2012: 39-41):

1) Ideas or beliefs drive the world, more than interests alone.

2) Such beliefs arise from our individual "reasons" for thinking or acting in certain ways. This rationality includes cognitive, axiological, and instrumental facets. To the believer, a "reason" always feels justified, even if it seems irrational or illogical to an outside observer. We have seen how the neo-Kantian theory of knowledge sheds light on the importance of understanding the meaning individuals give to their actions, and provides fruitful ways of explaining both their most well-founded reasons and their beliefs that seem most incomprehensible to the observer. It is the responsibility of that observer to try to understand them. This even suggests that there are no innate cognitive "biases" in the human brain. People may hold tenuous, questionable, or incorrect beliefs for a period of time, but these are eventually subject to revision and correction - a dynamic different from inherent "biases".

3) A two-step "rationalization process" - innovation, selection – accounts for the collective evolution of our beliefs, given our reasons, in our own context. This has been extensively illustrated.

4) A "continuity" exists between descriptive and normative beliefs. Both types are grounded on reasons, and both evolve through the rationalization process. In essence, it is erroneous to think of physics-chemistry-biology as domains where advancements in knowledge can be observed and to think of politics-morality-religion as merely a fabric of superstitions and illusions that may never be fully understood or explained. Numerous examples of this continuity have been provided. At times, we see the theology of grace being expounded in a highly rational manner (Quilliet, 2007), while biological laboratory research seems conducted in a rather

rudimentary, even arbitrary manner (as presented by Latour and Woolgar, 1979, who draw from it an undue relativism).

The necessary "ruptures" in the epistemology of social sciences are now evident. We must exercise caution with explanations that do not respect either the three principles of sociology as a science or the four principles of the theory of ordinary rationality.

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