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### Procedural Rationality and Procedural Justice: In search of “liberal” rationality

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#### Abstract

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# Procedural Rationality and Procedural Justice: In search of “liberal” rationality

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## Introduction

At first sight, the expressions “procedural rationality,” introduced and highlighted by Herbert Simon (1959; 1976; 1978), and “procedural justice” seem to belong to completely different classes of theories. These concepts arose from different theoretical and disciplinary backgrounds—the first from research on artificial intelligence and cognitive psychology; the second from moral and political philosophy—and there is no causal and historical link between them. For these reasons their terminological closeness has not received any particular attention in economics, being considered (if at all) merely as an uninteresting, and probably a bit of an unfortunate, coincidence. Nevertheless, the meaning and scope of “procedure” in each of these cases, and the relationship between them, are worth questioning.

What we call “procedural rationality” (also called “bounded rationality”) contrasts with how this concept is frequently used. That is, a significant part of economic literature refers to it as a kind of rationality that takes account of informational limitations (such as incomplete information, imperfect information, and informational asymmetries) (see Williamson, 1985; Rubinstein, 1998). However, such usage of this concept diverges in one important aspect from what Simon meant by it. For him, “procedural rationality” was not a weakened kind of classical rationality, as commonly used in economics, but an alternative paradigm<sup>3</sup> (Béjean & al., 2001). Indeed, if the concept of rationality that Simon borrows from psychology is bound, it is not so much because information exists, but that it is unavailable to agents. It is primarily the agents’ cognitive limitations and the complexity of their environment that prevent them from being able to identify all the possibilities and their outcomes (what is needed in order to be able to maximize one’s behavior under constraints). In this paper, the kind of “procedural rationality” that we confront and compare with a procedural approach to justice is the Simonian concept, not the “quasi-substantive”<sup>4</sup> rationality frequently used in standard economic literature.

All liberal theories of justice—despite their remarkable diversity (e.g., right-libertarianism, left-libertarianism, and different kinds of equalitarian liberalism)—are in opposition to the classical conception of justice inherited from the utilitarian tradition. On this account, justice is understood as a characteristic of the outcome of the choice, for example the reached state of affairs. Conversely, according to all liberal thinkers, justice does not come only from the characteristic of a state of affairs, but mainly from the characteristic of the process that leads to this state of affairs. For exactly this reason, liberal thinkers categorize their theories of justice as “procedural.” By doing so, liberal theories of justice distance themselves from what mainstream economists usually calls “rationality.” Thus, a rather straightforward question is whether liberal theories of justice align with the Simonian procedural rationality. Since the concept of rationality has been given a central role in economics as a theoretical discipline, the question of

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<sup>3</sup> “This shift from theories of substantive rationality to theories of procedural rationality requires a basic shift in scientific style, from an emphasis on deductive reasoning within a tight system of axioms to an emphasis on detailed empirical exploration of complex algorithms of thought” (Simon, 1978, p. 147). In referring to Thomas Kuhn, Le Moigne goes so far as to speak of a “scientific revolution” (Le Moigne, 1994, p. 126) to describe this “shift” from the substantive to the procedural dimension.

<sup>4</sup> The authors who use what we call “quasi-substantive” rationality use almost exclusively the term “bounded rationality,” rarely referring to “procedural rationality”—even though these two expressions denote the same idea. Interestingly, Simon commonly used the expression “bounded rationality” before 1973. Afterwards he spoke more frequently about “procedural rationality,” albeit without abandoning the first expression as reflected in his main economic works in three volumes, *Models of Bounded Rationality* (1982a, 1982b, 1997).

compatibility between procedural justice and procedural rationality amounts to questioning the compatibility of liberal theories of justice with economic categories, which is integral for *economic* theories of justice.

This paper focuses on the conceptual aspects of procedure in both procedural rationality and procedural justice. We try neither to establish a (likely nonexistent) historical link between these two kinds of approaches, nor to pretend to provide a full analysis of a specific liberal theory of justice. We also do not focus on the evolution of the Simonian concept of procedural rationality over time.<sup>5</sup> We enquire into the relevance, or lack thereof, of bringing together procedural rationality and justice in general terms. In order to do this, we draw from various liberal thinkers rather than focusing on one author or approach, and search for common traits in liberal theories of justice that obviously are far from being identical. In other words, we pay attention to the possible relevance of such a general approach, and we look at how Simon's ideas can shed light on the concepts of economic theories of justice.

Our paper consists of three parts. In section 1, we discuss some objections to the idea of a convergence of procedural rationality and procedural justice by focusing on the *homonymy argument*. In particular, we insist here on the fact that procedural justice does not set constraints *only* on the outcome (as a “substantive” concept of justice does), but also—and above all—*on the procedure which leads to the outcome*. Section 2 investigates the links between complexity and procedural approaches in terms of rationality and justice, and the relevance of our attempt to converge them. Section 3 underscores that this convergence implies both that liberal theorists of justice hold a different definition of the economic agent than does the tradition inherited from utilitarianism, and a different kind of ontology. We conclude by questioning the need for and the possibility of a non-welfarist social choice theory. Such a theory would be, in fact, a liberal version of social choice theory.

## **1. Against the *homonymy argument***

What prevents us from asking the question of the relevance of comparing and possibly converging procedural rationality and procedural justice is the prejudice that these two approaches have nothing in common. As already mentioned, these two concepts appeared in two different and unrelated theoretical fields. The perception that the terminological closeness between procedural rationality and procedural justice is an uninteresting and unfortunate coincidence that does not warrant further analysis is what we call the *homonymy argument*. As we claim, the lack of historical and causal mutual influences between them is not enough to prove the irrelevance of bringing them together. We begin here to fend off attempts to dismiss this idea at the outset. We suggest in this first section that there are strong reasons for thinking that the two kinds of procedures under discussion are similar. In order to do so, we deal both with a local and general version of the homonymy argument.

### **1.1. The *irrationality of justice argument*: a local variation of the *homonymy argument***

A specific variant of the *homonymy argument* is the *irrationality of justice*, which holds that justice is not about rationality, as would be economic choice, but it is about values that are not comparable with the economic concept of preferences. In order to support this argument, one could point to the well-known fact that after having strongly

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<sup>5</sup> For more on this point, see Quinet, 1994.

asserted that his theory of justice was part of the rational choice theory,<sup>6</sup> Rawls retreated:

“It was an error in *Theory* (and a very misleading one) to describe a theory of justice as part of the theory of rational choice [...]. What I should have said is that the conception of justice as fairness uses an account of rational choice subject to reasonable conditions to characterize the deliberations of the parties as representative of free and equal persons; and all of this within a political conception of justice, which is, of course, a moral conception. There is no thought of trying to derive the content of justice within a framework that uses an idea of the rational as the sole normative idea” (Rawls, 1985, p. 237, n. 20).

The theory of rational choice is both a theory of choice and of rationality. It holds that choices aim at maximizing the utility (either certain or expected) of the agent and that acting rationally consists precisely in maximizing the utility. Therefore, it is tempting to interpret this move and the correlated Rawlsian distinction between rational and reasonable as the acknowledgement that Rawls’s theory of justice is not about rationality, but refers instead to something else.

Nevertheless, it is interesting to contrast this *irrationality of justice argument* with the Simonian distinction between substantive and procedural rationalities, where the demarcating line lies in accounting for (or not) the role of procedure in characterizing the outcome. Thereby, Simon defines substantive rationality as denoting behavior proper for achieving given goals under the existing conditions and constraints. Rational behavior depends on the environmental characteristics, for the most part; the actor, on this account, determines only the goals (Simon, 1976, p. 130).

If the characteristics of the environment (such as possibilities, gains, and constraints) are known, the behavior can be calculated (i.e., maximized); thus, this kind of rationality refers to the way of reasoning classically used in economics—which lies at the core of the theory of rational choice. In other words, it is the characteristics of the outcome that lies at the heart of the substantive conception of rationality.

In contrast with substantive rationality, Simon defines procedural rationality in the following way: “Behavior is procedurally rational when it is the outcome of appropriate deliberation. Its procedural rationality depends on the process that generated it” (Simon, 1976, p. 131). When the characteristics of the environment are too complex to enable the maximization of calculation—in other words, when the goals, possibilities, and constraints are not clearly given to the agent—rationality cannot depend only upon the characteristics of the outcome. It must depend also on the process leading to the outcome. Interestingly Simon himself defines procedural rationality by speaking of “reasonableness” (Simon, 1978, p. 3).<sup>7</sup>

Consequently, dismissing as unimportant the possibility of a convergence between procedural justice and procedural rationality, based on the sole fact that Rawls’s theory of justice is not a part of the theory of rational choice, is at best inconclusive. In fact, we are led to the opposite conclusion: the concepts’ surprising terminological closeness is worth, and even requires, further analysis.

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<sup>6</sup> “The theory of justice is a part, perhaps the most significant part, of the theory of rational choice” (Rawls, 1971, p. 16; see also p. 17 and p. 583).

<sup>7</sup> “Parsimony recommends that we prefer the postulate that men are reasonable to the postulate that they are supremely rational when either one of the two assumptions will do our work of inference as well as the other” (Simon, 1978, p.8). In addition, Simon (1986) qualifies rationality used in cognitive psychology—that is, procedural rationality—as “procedurally reasonable” (1986, p. S211).

Once this point is accepted, one could still object that what applies to Rawls's thought does not necessarily apply to other liberal thinkers.<sup>8</sup> Indeed, the Rawlsian distinction between the rational and the reasonable is not explicitly shared by all liberal theorists of justice. Similarly, not all such theories refer, at least explicitly, to a different kind of rationality (i.e., in contrast to its classical meaning in economics). Nevertheless, all liberal theories of justice hold some version of a procedural concept of justice, which brings us back to the general *homonymy argument*.

### 1.2. The general *homonymy argument*

In order to deal with the general *homonymy argument*, let us return to the definitions of substantive and procedural justice. Substantive justice is defined depending on the characteristics of the end-state. For instance, welfarism<sup>9</sup> judges between any two states of affairs by weighing which one generates the greater utility, and relies on a substantive concept of justice: the state aimed for is defined exclusively according to its characteristics of maximizing utility.

Conversely, procedural justice is defined by the fact that the procedure leading to the outcome has been fair—that is, when “the formalities which define the procedure have been correctly adhered to” (Barry, 1965, p. 97). A simple illustration is a fair race, in which competitors start from the same point, at the same time, and nobody elbows anyone else, etc. (Ibid). These are the rules satisfied by the process that makes the outcome just (here the fact that the first person crossing the finish line who respected the formalities of the procedure is recognized as the winner), because if the procedure is just, the outcome of this procedure will be also fair (this is a shared point in procedural theories of justice). To take a more theoretical example, Nozick defines a just state of affairs by the fact that the process leading to it fulfills three principles of his entitlement theory (Nozick, 1974, p. 150-153). First, the acquisition principle states that one can hold previously unheld things (generally, some natural resource), which can also be called the right of first occupancy.<sup>10</sup> Second, the transfer of holdings principle specifies that the transfer of a thing from one person to another cannot be forced but must come from a reciprocal agreement. Third, the principle of rectification, aims at fixing *a posteriori* an unfair acquisition or transfer. When these three principles are satisfied, then the procedure of acquisition of a good is, according to Nozick, valid. It is also enough to ensure that the end state is just regardless of what this state is (e.g., even if it is otherwise unequal). As the justice of the state of affairs is defined independently of any characteristic of this state, but depends solely upon the process that leads to it, Nozick's theory of justice is procedural.

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<sup>8</sup> We need to stress that here we refer to Rawls just as an example, and our understanding of procedural rationality in liberal theory of justice does not necessarily rely on Rawlsian procedure and the veil of ignorance. Rather, we endorse the Simonian account of procedural rationality, which is broad and flexible enough to include various particular procedures of deliberation proposed, explicitly or implicitly, by various liberal theorists of justice.

<sup>9</sup> Sen defines welfarism as “the principle that the goodness of a state of affairs depends ultimately on the set of individual utilities in that state, and—more demandingly—can be seen as an increasing function of that set” (Sen, 1979, p. 464). Contemporary mainstream economics rests on welfarist assumptions. The difference between utilitarianism and welfarism is that the former specifies that utilities have to be aggregated by means of a summation of utilities, while the latter does not specify this point. Consequently, utilitarianism is a particular case of welfarism.

<sup>10</sup> Nevertheless, Nozick specifies the right of the first occupancy by adding to it a *Lockean proviso* that legitimizes the initial acquisition of an unheld thing that depends on the fact that it does not worsen the situation of others. In other words, it is possible, according to Nozick, to legitimately acquire land or offspring *only if* that does not harm anybody else (Nozick, 1974, p. 174-182).

Also the right-libertarians, like D. Friedman (1973) and Rothbard (1973), and the left-libertarians such as Vallentyne, Steiner and Otsuka (Vallentyne & al., 2005), and liberals such as Hayek (1973-79) and Kolm<sup>11</sup> (2005) advocate different kinds of procedural approaches of justice. The emphasis on the procedures in diverse liberal theories of justice is persistent, in other words, even when we take into account all the differences between these authors.

Referring to Hayek as a liberal *theorist of justice* might seem surprising given that the second volume of his *Law, Legislation and Liberty* (1973-79) is entitled *The Mirage of Social Justice*. In a nutshell, Hayek claims that the concept of *social justice* “is wholly devoid of meaning or content” (1973-79, vol. 2, p. 96). However, one can first argue that an opposition to the idea of *social justice* is not inconsistent with holding some other sort of a theory of justice.<sup>12</sup> Second, pretending that there is no theory of justice in Hayek’s works would be too quickly forgetting that the subtitle of his three volume book, *A New Statement of the Liberal Principles of Justice and Political Economy*, refers explicitly to justice. It is clear that Hayek refuses to define as “just” a state of affairs depending upon its intrinsic characteristics, and advocates, for this reason, a procedural approach of justice.

The distinction between substantive and procedural rationality and substantive and procedural justice—even without going deeper into additional arguments—makes it difficult to advocate *a priori* the *homonymy argument*. In both cases the substantive approaches define constraints *only* for the outcome, while the procedural approaches define constraints primarily and mainly for the procedure leading to the outcome. If these observations are not sufficient to assert that the distinction between the two kinds of rationalities and two kinds of justice are similar, it is at least sufficient to deny the relevance of the *a priori homonymy argument* and to push our analysis further.

## 2. Procedures as a response to complexity

After showing that the homonymy argument is not a major strike against our attempt to compare the juxtapositions of substantive and procedural rationalities with substantive and procedural justice, we establish in this second part the fruitfulness of this attempt by discussing the relation between procedural justice and complexity. Indeed, if rationality can be a characteristic of individual behavior as well as of collective action, justice gains meaning between at least two persons<sup>13</sup> and, *a fortiori*, in society at large. That is why with considerations of issues of justice come problems of multiple interactions and composition—in other words, of the question of how to deal with complexity. As Cozick rightly notes, a shift from individual procedural rationality to collective procedural rationality needs to be cautious because it is possible that the expression of collective procedural rationality is quite different from the individual one (Cozick, 2008a, p. 219). However, we do not pretend to make such a shift. Rather, in this second section we only point out the similarities between Simonian procedural

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<sup>11</sup> Surprisingly, Kolm’s *Macrojustice* (2005) has been discussed almost exclusively by means of welfarist tools and reasoning, even though this economic theory of justice is founded on a deontological and procedural conception of justice (Gharbi & Meinard, 2015).

<sup>12</sup> An analogous argument can fit Rothbard’s position. Basically, he holds the idea of full self-ownership (Rothbard, 1973, p. 28) and the right of first occupancy, according to which the first user of a resource becomes its legitimate owner. This position, although different from that of Hayek, also deprives the idea of *social justice* of any content. For more on the link between self-ownership and justice in libertarianism in general, see Gharbi & Sambuc (2012).

<sup>13</sup> On this point we follow the common view that aligns with the Socratic thesis, according to which one cannot be unjust to oneself.

rationality and liberal theories of justice, leaving aside questions and issues raised by such shift itself.

### 2.1. Procedures and complexity in Hayek's late thought

The central concept of Hayek's main opus for describing human societies is the concept of *spontaneous order*, which refers to "an order [that] has not been created by an outside agency" (Hayek, 1973-79, vol. 1, p. 39). Some spontaneous orders can be observed in very different realms as life, mind, and society; in society it concerns economics, language, law, and history. The spontaneous order that is defined as "a self-generating or endogenous order" (Ibid. vol. 1, p. 37) is contrasted with the *made order*, which is "an exogenous order or an arrangement [that] may again be described as a construction, an artificial order" (Ibid.). It is very important to notice that the definition of a spontaneous order is clearly anti-teleological, or, to express the same idea differently, anti-finalist. Indeed, because it has not been thought of and implemented by some person or group of persons, the spontaneous order has no particular purpose—except the purpose to "tend to secure the preservation or restoration of that order," though this way of speaking is misleading and should be avoided (Ibid., vol. 1, p. 39). In other words, the spontaneous order has been established in a procedural way and does not allow us to think about the organization of human societies from a substantive perspective<sup>14</sup>—a perspective that would be determined only by the characteristics of the targeted goal.

According to Hayek, no substantive approach can be used to understand or even to orient a contemporary human society. His explanation of such an impossibility is worth emphasizing: "the fact of our irremediable ignorance of most of the particular facts which determine the processes of society is, however, the reason why most social institutions have taken the form they actually have" (Ibid. vol. 1, p. 13). This ignorance is not accidental, but is a necessary product of the complexity of the social system:

"Spontaneous orders are not necessarily complex, but unlike deliberate human arrangements, they may achieve any degree of complexity. One of our main contentions will be that very complex orders, comprising more particular facts than any brain could ascertain or manipulate, can be brought about only through forces inducing the formation of spontaneous orders" (Ibid. vol. 1, p. 38).

Human societies are such highly complex spontaneous orders that they cannot be ascertained or manipulated due to the cognitive limitations of the human mind,<sup>15</sup> which is the only reason why Hayek claims both that constructivism is a fallacy and that social justice is a mirage.

Being the result of independent actions of very numerous individuals aiming at diverse goals, human societies are in the process of perpetual change. The cognitive limitations of individuals facing this complexity result in adaptation to the system being

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<sup>14</sup> Although Hayek speaks of "constructivist approaches" instead of "substantive" ones (e.g., 1973-79, vol. 1, p. 11), he refers to the same idea. The main tenants of constructivist approaches, according to Hayek, come from Descartes (Ibid. vol. 1, p. 11) and utilitarianism (Ibid. vol. 2, p. 17). On Descartes he writes: "Complete rationality of action in the Cartesian sense [i.e., the constructivist sense] demands complete knowledge of all the relevant facts" (Ibid., vol. 1, p. 12).

<sup>15</sup> On the contrary, made orders are "relatively *simple* or at least necessarily confined to such moderate degrees of complexity as the maker can still survey; they are usually *concrete* in the sense [...] that their existence can be intuitively perceived by inspection; and, finally, having been made deliberately, they invariably do (or at one time did) *serve a purpose* of the maker" (Ibid. vol. 1, p. 38).

necessarily an endogenous process, as it cannot be the result of calculation. In other words, it can be only procedural.

## 2.2. Complexity and procedural rationality in Simon's thought

In our attempt to compare procedural justice and procedural rationality it is important to note that complexity, non-finalism, human cognitive limitations, and adaptation are elements of the Simonian definition of procedural rationality:

“A general proposition that might be asserted about organizations is that the number of considerations that are potentially relevant to the effectiveness of an organization design is so large that only a few of the more salient of these lie within the circle of awareness at any given time, that the membership of this subset changes continually as new situations (produced by external or internal events) arise, and that ‘learning’ in the form of reaction to perceived consequences is the dominant way in which rationality exhibits itself. In a world where these kinds of adjustments are prominent, a theory of rational behavior must be quite as much concerned with the characteristics of the rational actors—the means they use to cope with uncertainty and cognitive complexity—as with the characteristics of the objective environment in which they make their decisions. In such a world, we must give an account not only of substantive rationality—the extent to which appropriate courses of action are chosen—but also procedural rationality—the effectiveness, in light of human cognitive powers and limitations, of the procedures used to choose actions” (Simon, 1978, p. 9).

Procedural rationality does not deal directly with the question of appropriateness of means for ends, as is the case in substantive rationality (in which ends are already given, not a subject to deliberation). Rather, it focuses on the cognitive process of thought that leads to discovering an appropriate adaptive behavior—that is, on deliberation. As we already noticed in the first section, an individual is procedurally rational because his or her behavior is adequate to the deliberation that generated it. Procedural rationality consists of searching for a procedure capable of finding both the objective and the means to reach it (Béjean & al., 2001, p. 18). In an environment too complex to be cognitively analyzed and manipulated in a comprehensive manner, procedural rationality is the process of reasoning in order to find rules of acting. This emphasis on deliberation that generates the behavior is essential: deliberation gathers the procedures by which a person gets accustomed to his or her own cognitive limits during the decision making process. Let us finally underscore the fact that, as an additional argument in support of the claim that the environment is too complex to be cognitively mastered, Simon mentions its ever-changing nature.

Procedural rationality follows two principles: the search principle and the *satisficing* one. As soon as a decision maker realizes that he or she is unable to comprehend the whole set of constraints, possibilities, and associated gains, he or she must search for a satisficing option:

“What a person *cannot* do, he or she *will not* do, no matter how strong the urge to do it. In the face of real-world complexity, the business firm turns to procedures that find good enough answers to questions whose best answers are unknowable. Because real-world optimization, with or without computers, is impossible, the real economic actor is in fact a satisficer, a person who accepts ‘good enough’ alternatives, not because less is preferred to more but because there is no choice” (Simon, 1969, pp. 28-29).

The satisficing principle plays the role of a rule that terminates the search process. When an alternative that fits with the individual's level of aspiration is found, it is

chosen. As Mongin notes, the advantage of the satisficing principle in contrast with the optimization rule is that it allows one to make decisions without exploring the total set of possible actions (Mongin, 1984, p. 32). Moreover, procedural rationality involves a process of revision of aspirations. If a satisficing alternative is easily found, the aspiration of the individual will increase. Conversely, if a satisficing alternative is impossible (or very difficult) to find, the aspirations will decrease. One can see that procedural rationality is entirely endogenous,<sup>16</sup> contrary to substantive rationality, which is exogenous insofar as the criterion of choice does not result from the substantive reasoning of the maximizer.

### 2.3. From the individual to the collective level

In this section we will focus particularly on the collective level. Indeed, both the Hayekian issue of dealing with very complex spontaneous orders and the Simonian search for a satisficing alternative pertain also to the individual level (an individual or a firm manager). Yet the move from the individual to the collective level is vital for our considerations since theories of justice are concerned only with the collective dimension of rationality. That is why an individual's deliberation to determine the individual rules of behavior is not sufficient: the deliberation has to be *collective*. This collective dimension remarkably increases the complexity that theories of justice have to deal with.

While Hayek deduces from the complexity of human societies that the idea of social justice is devoid of meaning, Rawls proposes a procedure to reach the basic structure of society that is the object of collective agreement.<sup>17</sup> The function of the Rawlsian fiction of the veil of ignorance is to impartialize judgments. Under such a veil, which is “a purely hypothetical situation characterized so as to lead to a certain conception of justice,” individuals do not know their place in society, their class position, their social status, or their fortune in the distribution of natural assets, abilities, etc. (Rawls, 1971, p. 12). Rawls clearly identifies that what is at stake in this issue is deliberation:

“It is clear, then, that I want to say that one conception of justice is more reasonable than another, or justifiable with respect to it, if rational persons in the initial situation would choose its principles over those of the other for the role of justice. Conceptions of justice are to be ranked by their acceptability to persons so circumstanced. Understood in this way the question of justification is settled by working out a problem of deliberation: we have to ascertain which principles it would be rational to adopt given the contractual situation” (Ibid., p. 17).

After having taken into account the Rawlsian distinction between the reasonable and the rational, this excerpt can be interpreted as saying that the “rationality” mentioned here is not substantive rationality in the Simonian sense, but procedural.<sup>18</sup> In this regard, it is interesting to note that the veil of ignorance is described as a kind of procedure: “we can enter the original position, so to speak, simply by following a certain procedure, namely, by arguing for principles of justice in accordance with [the] restrictions” of the veil of ignorance (Ibid., p. 19).

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<sup>16</sup>Although this is not the primary way in which Simon defines procedural rationality, it is worth noting that sometimes he refers to it as “endogenous rationality” (Simon & al., 1992).

<sup>17</sup>Surprisingly, Hayek claims that the differences between his position and that of Rawls are “more verbal than substantial” (Hayek, 1973-79, vol. 1, p. xvii). For an analysis and discussion of the scope of this Hayekian assertion, see Gamel (2008).

<sup>18</sup>This is despite the fact that in the next sentence Rawls asserts: “This connects the theory of justice with the theory of rational choice” (Rawls, 1971, p. 17).

Our point is not to argue in favor or against the Rawlsian fiction of the veil of ignorance, but to underscore the fact that the function of this fiction is to procedurally determine procedural rules of justice. Thus, the increase of complexity stemming from the necessary collective dimension of theories of justice is explicitly tackled by means of a procedural approach. Here, the liberal process of deliberating about justice is a kind of second-level procedure that fits with the procedural approach. This continuity between the first and the second levels of procedure is enabled by the fact that procedural rationality is endogenous.

Each liberal theory of justice has to deal with the question of collective deliberation in order to justify the first level of procedural rules (the original position in Rawls, emergence of spontaneous orders in Hayek, endogenous social choice in Kolm,<sup>19</sup> etc.). That is why it is necessary for us to assert the fruitfulness of converging procedural rationality and procedural justice. The weakness of the (right as well as left) libertarian positions rests precisely on the fact that they do not explicitly tackle this second level of procedure.<sup>20</sup>

### 3. Converging procedural rationality and procedural justice: consequences

The implications of the transition from a *substantive, exogenous conception of rationality* to a *procedural, endogenous one* for methodology and economic philosophy have been, for the most part, already explored. These implications pertain, most notably, to the nature of the economic agent, the notion of the world in which a person lives, and his or her relationship to the world (Mongin, 1984; Le Moigne, 1994; Béjean & al., 2001; Davis, 2014). In the following section we claim that these implications are valid also for liberal theories of justice. Obviously, we do not pretend to exhaust here all the epistemological and ontological consequences of shifting to a procedural approach for both rationality and justice, but we note those most important from our perspective.

#### 3.1. Consequences of the procedural rationality shift

Procedural rationality allows us to deal with the complex and ever-changing environment. In such an environment, there is no single, overarching, and finite solution (the optimal solution), but a plurality of satisficing solutions. These differ depending on the individual who chooses, since each individual can deliberate differently. Values that motivate an action are also diverse, incommensurable, and not mutually reducible. However, within individual procedural choice the plurality of values does not actually add to the plurality of satisficing solutions insofar as the world is not conceived as given, objective, and separate from the acting individual.

In *The Sciences of Artificial*, Simon distinguishes between a local and global maxima: “Finding a local maximum is usually easy: walk uphill until there is no place to walk. Finding the global maximum, on the other hand, is usually exceedingly complex unless the terrain has very special properties (no local maxima)” (Simon, 1969, p. 47). So far we focused solely on Simon’s argument in favor of the superiority of procedural over substantive rationality in order to understand concrete human behaviors. It is worth mentioning an interesting point about the relationship between them: substantive rationality is a particular case of choosing in which the behavior can

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<sup>19</sup> The theory of endogenous social choice is presented in the fourth part of *Macrojustice* (Kolm, 2005, pp. 279-360).

<sup>20</sup> For a critical discussion of left-libertarian theories of justice based on the fact that they do not explicitly deal with the second level procedure leading to the determination of the first level of procedural principles that they advocate, see Gharbi (2014). The same criticism can be directed to right-libertarians.

be separated from the deliberation that led to it (Quinet, 1994, p. 153-154). Indeed, in complex situations, individual behavior will be imperfectly adapted with respect to contexts and constraints. As there are several ways of being imperfectly adapted, there will be several behaviors likely to approximately realize a given objective. Therefore, in such a context, understanding and assessing a behavior require taking account of deliberative processes that generates the choice. In a simple situation where the behavior will be more perfectly adapted, it will be possible to understand and assess the choice without referring to deliberative processes whatsoever.

Davis shows that the link between substantive rationality and the standard notion of the economic agent is strong enough that these two conceptions cannot be dissociated from one another: they are so “rigorously and deductively tied together [...] that they stand or fall together” (Davis, 2014, p. 2). More precisely, a shift in the conception of rationality will directly impact the conception of the individual—that is, of the economic agent—employed. Classical substantive rationality, which is central to standard rationality theory, implies a representation of the individual as monadic, totally enclosed—that is, a “complete” individuality. Procedural (or “bounded”) rationality implies a conception of an individual who is not enclosed in him or herself, but who is open to the world.

In the substantive theory of rationality, the world is exogenous to the individual: it is both objective and given to the individual, and the individual is represented by a utility function. Strictly speaking, there is no interaction between the external (and worldly) constraints and the internal ones, namely preferences. The optimization calculation takes all these elements into account, but they never interact: the world does not modify preferences and preferences do not modify the world. On the contrary, in the procedural theory of rationality, the individual is not so strictly separate from the world: neither objectives, nor the means to reach them are given to her or him. An individual learns from her or his experiences and changes aspirations accordingly. On the other hand, the world is not totally exogenous to the individual insofar as deliberation is the cognitive process that determines which elements of the environment will be considered as relevant and which will be neglected. The inability to cognitively apprehend the complex environment of the world leads to the impossibility of strictly separating the individual from the world, on the one hand, and the world from the individual, on the other hand.<sup>21</sup> For this reason, Davis says that in the theory of procedural rationality the individual is not totally enclosed in him or herself.

The fact that the economic agent, in light of the procedural conception of rationality, is not (as in the standard concept of the economic agent) strictly enclosed in him or herself can take different forms. People can, for instance, socially identify with others and perceive themselves as members of a group (a sense of collective belonging), which will define their identity. Each individual could then simultaneously have multiple social group identities as reference points. If one’s social identity conflicts with another, the individual will have to give priority to one over the other, and can decide to abandon one of her or his reference points, which amounts to a change of identity (Davis, 2014, p. 13).

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<sup>21</sup> Nevertheless, it is worthwhile to emphasize that individuality does not disappear in the process: “individuality is endogenous to the world yet also relatively independent of it in virtue of the capacity attributed to individuals to self-organize themselves through learning. Indeed, individuals are agents, or beings with causal powers, precisely because they possess this capacity” (Davis, 2014, p. 13).

### 3.2. Consequences for liberal theories of justice

All of these considerations have crucial implications for liberal economic theories of justice. First, the collective dimension of issues of justice requires that liberal social choice (in the double sense of choosing a particular kind of society, and of the choice made by a society) is made by taking account of boundaries that define procedural rationality. Indeed, collective decisions always take place in a complex context and, consequently, cannot be understood or assessed independently from deliberation. The necessity of the deliberative dimension stems from the fact that the result of deliberation cannot be known in advance. Procedural rationality is not unequivocal—it is the search for a satisficing alternative among many possibilities. Contrary to individual decisions, in collective procedural deliberation the plurality of individual values can increase the difficulty of reaching a *collective* decision. Values represent various aspects of the world that are differently perceived by individuals. In other words, individuals will deliberate differently about the same question when the collective deliberation searches for a *collectively* satisficing result. For this reason, collective deliberation requires an encounter and confrontation between many different alternatives. Due to the impossibility to predict the result of deliberation, the openness of the economic agent in procedural rationality provides a liberal justification for democratic processes (both social debates and democratic elections).<sup>22</sup>

Since liberal theories of justice are underlined by procedural rationality, their conception of the economic agent differs from that of standard economic theory. The agent is not defined only as a set of consistent and stable preferences over time, and he or she is not assumed to be a kind of maximizing machine. First, he or she is capable of deliberating. In liberal theories of justice, as well as in the Simonian procedural rationality framework, the object of rationality moves from the “result of the decision” to the “act of deciding” (Béjean & al. 2001, p. 21). The individual in liberal theories of justice is also able to learn and change his or her views depending on context and experiences had. Due to the necessity of dealing with a complex and ever-changing world, this individual is more complex than the *homo economicus* of standard economic theory. Also, each person is ever revising his or her aspirations according to the success or failure of previous attempts to find a satisficing result. It is also individual openness that makes a case not only for pluralism and complexity of aspirations, but also for a complex and pluralistic identity that shifts always with the choice of the values of the groups to which he or she belongs. This last point cannot be underestimated. It indicates that liberal theories of justice are open to the possibility that individuals are influenced in their decisions by some altruistic or collective values and by some conventions or social norms, which amount to an intermediary position between strict methodological individualism and holism. Such an approach falls under a complex methodological individualism similar to that of economics of conventions (Béjean & al., 2001, p. 23).

#### Concluding remarks

Simon’s aim was to compete with the substantive conception of rationality classically used in most of contemporary economics. Our own objective is certainly less ambitious. To our minds, as soon as mainstream economics is aware of the methodological choice operating in the substantive approach of economics—in terms of the reasons that lead to this choice and of the limitations that it induces on the scope of

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<sup>22</sup> Our point here is not to say that the substantive rationality approach is not compatible with democracy, but to underscore that the reasons in favor of democratic processes are not similar in substantive and procedural approaches.

the obtained results—it can become immune to many criticism. However, it is interesting to note that aside from this dominant methodological tradition, the liberal approach rests on quite different methodological choices. Moreover, it is important to highlight the epistemological and ontological differences linked with the methodological choices of the liberal stance especially in the field of economic theories of justice. These differences are, often mistakenly, hidden due to the fact that both welfarist and liberal traditions advocate, although for different reasons,<sup>23</sup> a kind of market economy.

We have shown that converging procedural justice and rationality is relevant in terms of economic philosophy and methodology, and that the procedure to which liberal theories of justice refer can be interpreted as Simonian procedural rationality. Thus, it is surprising to see that liberal theorists of justice rarely refer to Simon's works. For example, Simon's name is missing in the later works of Rawls (1993, 2001)<sup>24</sup> despite the fact that Rawls explicitly discusses rationality.<sup>25</sup> It remains that the convergence that we propose implies a different notion of the economic agent assumed in liberal theories of justice from that of the welfarist tradition. Indeed, taking into account deliberation as an integral part of the process of choice, and consequently presenting the act as inseparable from deliberation, requires using a more complex representation of the economic agent in the image of the complexity of the world one must confront.

One important aspect of the Simonian program has been largely realized by the development of behavioral economics and its empirical studies. Nevertheless, some theoretical dimensions and aspects of procedural rationality remain underexplored. Thirty years ago, Mongin asserted that the procedural rationality approach has not been properly investigated at the theoretical level and that the few attempts in this direction failed to express all the strengths of Simon's ideas. Despite acknowledging the difficulty of such a task,<sup>26</sup> he claimed that it was urgent to develop a rigorous axiomatization of Simon's proposals (Mongin, 1984, p. 23 and 59). This observation seems, unfortunately, as relevant today as it was thirty years ago. Indeed, the axiomatics of procedural rationality has not been, to our knowledge, appropriately developed yet.

The convergence between procedural rationality and justice that we argue for in this paper is an additional reason to explore the possibility of an axiomatic base. With a proper axiomatization of procedural rationality, and taking account of the necessity pointed out by Cozick (2008a) to be extremely cautious in shifting from individual to collective procedural rationality (which we mentioned in the opening of our second section), two ways of theoretical developments opened up. First, a new economic way of theorizing issues linked to concrete collective deliberation and liberal democracy becomes possible. This would lead economics to play a bigger role in the

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<sup>23</sup> In brief, it is not because the market is considered to be efficient that the liberal tradition advocates it, but because it is the space where individual freedoms express themselves.

<sup>24</sup> This absence is even more surprising when one notes that before distinguishing between the rational and reasonable, Rawls makes two references to Simon's works: Rawls, 1971, p. 143, n. 14; p. 418, n. 15.

<sup>25</sup> The erudition of Hayek is also extremely remarkable. The lack of reference to Simon in Hayek's late works could partly stem from the fact that he stopped writing several years before Rawls. His last uncontested book being the third volumes of *Law, Legislation, Liberty*.

<sup>26</sup> "The lack of a proper axiomatization of "bounded" or "procedural" rationality ideas refers to two different aspects: on the one hand, the division of this approach in a multiplicity of models that are related by some common principles, but are often very dissimilar; on the other hand, the hybrid characteristic of these models, in general little formalized, and easier to transpose in computer language than to entirely translate in mathematical symbols" (Mongin, 1984, p. 23, our translation).

interdisciplinary studies on this topic, which currently interests mainly political scientists and philosophers. And second, it would make possible modeling a liberal way of dealing with the question of social choice. Such a possibility (which has been conceptually explored by Kolm, 2005) would amount to opening a new branch in social choice studies, namely liberal social choice studies.

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