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Heterogeneity and law: toward a cognitive legal theory

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Abstract. Since the 1990s, Sunstein, Jolls, and Thaler have questioned the perfect rationality assumption in law and economics (L&E) and introduced a behavioral approach. But Gregory Mitchell has criticized behavioral law and economics (BL&E). He argues that much of the scholarship within the field describes psychological research as if it provides general laws of thought and behavior rather than insights conditional on the setting, on the characteristics of subjects, and on the specificity of the task in hand. Human heterogeneity is not adequately included in models developed under behavioral assumptions of this kind. This paper argues that Mitchell's work contributes to develop a cognitive approach to Law closer to the cognitive theory of institutions and to the Original Institutional Economics (OIE). Mitchell's contextualist approach seeks to identify the specific conditions under which irrational behavior occurs and to understand when and how it can be remedied.

1. Introduction

In the middle of the last century, US scholars of law started applying the tools and the insights offered by the neo-classical economics to their inquiry into law (Calabresi, 1961; Coase, 1960; Posner, 1973). The aim of this new approach was to develop both a positive theory and a normative theory of law on which to build efficient legal norms (Cooter and Ulen, 2000; Posner, 1983).

Standard economics models and econometric tools improve L&E investigation into two of its main focuses: (1) efficiency; efficiency is considered from two different points of view: on the one hand, it means that common law (judge-made law) is efficient; on the other, from a normative point of view, it also means that law must be efficient. (2) incentives and people's responses to those incentives.

L&E focuses on these two main issues to develop formal models to explain law-making processes, trial and adjudication, and social reactions to law and institutions (Rowley, 1989). The use of economic tools in L&E has been widely criticized since the beginning of their application (Ellickson, 1989; Kelman, 1983). Many legal scholars have maintained that applying economic tools is not

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sufficient to investigate the logic underlying the law (Kelman, 1983). Moreover, they have argued that the reductionist approach of economics, which describes human behavior on strict assumptions that do not represent real behavior, cannot enable L&E to develop even a positive theory of law, and it excludes any consideration of justice from the analysis (Kennedy, 1981; Michelman, 1983).

Since the first application of standard economics tools to law, the two disciplines have been closely interconnected. Hence, L&E has been strongly influenced by the changes and debates that have characterized the development of economics since the middle of the last century (Rachlinski, 2000). In recent years, the results obtained by the behavioral approach to economics have given new emphasis to the first criticisms brought against L&E (Rachlinski, 1998). This approach suggests that human behavior deviates from the perfect rationality assumption. But it is possible to model and predict human behavior also when it is affected by biases, because these deviations are not completely random. During the 1990s authors such as Sunstein, Jolls, and Thaler (1998), started investigating the opportunities offered by the insights derived from behavioral economics and they started a behavioral approach to L&E (BL&E) based on a more exhaustive theory of economic behavior whereby better understanding of the foundations of individual behavior should strengthen both the descriptive power of models and their normative power.

In the same years in which behavioral economics emerged and the debate on the perspective of legal theory began, another important research field in economics was developing: cognitive economics (CE) (Egidi and Rizzello, 2004). CE shares with the behavioral approach the idea that human behavior is complex and that economic theory must ground its theories on a better understanding of cognitive decision-making processes.

Nevertheless, these two approaches have important differences and follow (almost partially) different paths of inquiry (Egidi and Rizzello, 2004). CE was born in opposition to neo-classical economics and it investigates economic problems as complex phenomena: its entire inquiry begins with the analysis of the micro-foundations of human behavior. CE is a school of thought based on the idea that the study of economic behavior has to be founded on the interdisciplinary approach. It strongly criticizes the assumptions of standard economics focusing on the complexity of decision-making processes of heterogeneous agents. It questions the predictions of most standard economics models and the rigidity of the formal tools applied. Its main object is to open the *black-box* containing all the processes through which preferences are formed and are translated into choices. CE is different from behavioral economics, whose methodology is based on the analysis of the effectively exhibited behaviors. This explains why CE critique to standard economics is substantial. The idea is that each phenomenon can be investigated with different tools and from different points of view. For example, CE investigate interdependent decisions using game theory not as a formal tool to predict specific outcomes but as a framework

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of analysis that allows investigating the complexity of agents' decision making processes (Ambrosino, 2013; Schelling, 1960); the outcomes of the game do not simply depend on strategies, but they are strongly linked to social context, path dependence dynamics, and focal points (Ambrosino, 2006; Schelling, 1960).

One of the main focuses of CE is the analysis of norms and institutions (Ambrosino, 2006, 2012b; Rizzello and Turvani, 2000, 2002). Whilst legal theory has been much influenced by the development of behavioral economics, the cognitive analysis of institutions has not been considered. There are two main explanations for this lack of interest in the cognitive theory of institutions. The first concerns the different concept of norms underlying the two research fields; the second relates to the fact that the cognitive theory of institutions is still far from developing a normative theory, and it focuses its inquiry on the positive level.

Among the authors that have contributed to the development of legal theory and to the debate on the behavioral approach to L&E, Gregory Mitchell stands out for the originality of his ideas.

L&E and BL&E have both given too little attention to the role of institutional forces and social norms in constraining and coordinating heterogeneous individuals. Mitchell points out the relevance of this issue and he shows relevant points of contact with institutional economics that are not yet being investigated.

Mitchell's criticisms of BL&E and his contextualist approach to law represent a new bridge between CE and L&E by offering fresh opportunities for the development of a cognitive legal theory in which the core of the inquiry is the complexity of human behavior in legal contexts. Such a cognitive approach will also bring into the analysis of law relevant contributions from the tradition of Institutional Economics and from OIE.[1] The tradition of that school of thought, in fact, is considered fundamental for the development of cognitive inquiry into economic institutions (Ambrosino, 2012a, 2014). The suggested cognitive legal theory shares many features with the *I-H-C* (Instinct-Habits-Culture) *theory* at the basis of OIE (Brown, 2007) and can contribute to updating it in light of new knowledge in other fields like anthropology, psychology, and neuroscience.

Mitchell stresses the idea that agents are heterogeneous. His legal theory shares with CE and OIE the rejection of the perfect rationality assumption and it contests the existence of 'standard' bias in human behavior. Mitchell focuses on the need of a case specific inquiry in that social, economic, and cultural context play a central role. From a joint analysis of Mitchell's legal theory, CE and OIE emerges a common demand for a multi-disciplinary approach to develop a new legal theory that encompasses the importance of: (1) agents' cognitive pre-dispositions; (2) learning processes and the influence of past experience; (3) the role of context.

1 The paper refers to Original Institutional Economics to indicate that line of inquiry that today goes back to the tradition of the Institutional School and particularly to Veblen's work.

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This paper argues that Mitchell's work represents an outstanding contribution to give new impetus to the development of a legal theory that can elaborate more dynamic analyses, and develop more nuanced, psychologically-grounded, and empirically viable theories of human behavior. In this perspective, the present discussion contributes to the recent debate on the future of institutional economics in that emerges the need of a new paradigm to investigate institutions stressing the role of complexity, uncertainty, severely bounded rationality, and the use of rules of thumb (Hodgson, 2014; Hodsgon and Stoelhorst, 2014).[2]

This paper is organized into four sections: Section 2 summarizes the main features of the CE of institutions and discusses its connection with OIE. Section 3 presents Mitchell's main criticisms of BL&E while section 4 describes his contextualist approach and discusses his analysis of the role of second thoughts in debiasing human behavior. Finally, section 5 considers the opportunities offered by Mitchell's approach to legal theory for the development of a cognitive legal theory.

2. Cognitive economics of institutions and its connections with OIE

CE developed during the 1970s with the explicit aim of changing the tools and the core assumptions of standard economic theory (Bourgine and Nadal, 2004). This approach drew on the insights yielded by the cognitive revolution that focused on cognition defined as the inner workings of the human mind. The cognitive approach to economics rejects the neo-classical concept of human nature and investigates cognitive processes such as thoughts, mental representations, and consciousness in order to understand human decision-making. This new approach is based on the idea that understanding economic behavior is a complex issue and it requires contributions from different research fields (Camerer *et al.*, 2005). CE investigates those mental processes that lead to the emergence of individuals' preferences and shape individuals' choices.[3] Contrary to standard economics and behavioral economics, the starting point for all investigations is the idea that individuals are strongly heterogeneous. Hence, their behavior is the product of idiosyncratic mental processes in which the environment, the social and institutional context, and the way in which social interactions are shaped play a very important role (Bourgine and Nadal, 2004; Walliser, 2008).

To date, the CE has not been applied to L&E. Nevertheless, the cognitive theory of institutions (North, 1991, 1994, 2005) can contribute to the development of a cognitive legal theory. Institutions have been considered as the humanly devised constraints that structure political, economic, and social interaction (North, 1991); as rules of behavior emerging from the interaction among perfectly rational agents in repeated games (Schotter, 1981); and as

2 See Hodgson and Stoelhorst (2014, p. 53).

3 See Egidi and Rizzello (2004).

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governance structures (Williamson, 2000). These different definitions suggest that economics has for long considered institutions and individuals as separate concepts. CE of institutions, by contrast, stresses the need for a joint analysis of institutions and agents, in that they are considered to belong within the same framework (Ambrosino, 2006). The origins of this approach lie in the Old Institutional School of Veblen and in the Austrian School, particularly in the works of Commons, Menger, and Hayek. In this tradition, agents and institutions are strongly interconnected. Such interconnection implies a theory of human nature that replaces the standard homo-economicus with a multi-dimensional human being whose socio-cultural background strongly influences his/her behavior (Jensen, 1987). From this perspective, institutions are defined as systems of established and prevalent social norms that structure social interaction (Hodgson, 2006). In Veblen's work, economic theory is based on three basic notions: 'first, that behavior is governed fundamentally by ... instincts which give rise to action of a dynamic sort; second, that behavior is guided more proximately by institutions; ... third, that institutions, as viewed over the course of human history, have been in a state of slow but continual change'. (Anderson, 1933, pp. 618, 626). Veblen's idea of economic theory is close to Hayek's theory of institutions where a rule (and, hence, institution) is defined as any behavioral disposition, including instincts and habits, which can give rise to regularity in the conduct of individuals (1979). Rules (institutions) are based on a body of accepted beliefs that are strongly related to the social environment in that agents grow up (Dawson, 1998).

Authors like Coase, North, and Williamson have enlarged the inquiry into economic institutions.[4] These authors' works on the endogenous emergence and evolution of economic institutions have contributed to redirecting the study of economic behavior. CE acknowledges the importance of such contributions and investigates the relationship between institutions and human behavior. From the perspective of CE, individual action and the rise of social norms have an important feature in common: the human mind. As institutions constantly interact with agents, they lose their purely functional nature and become themselves expressions of those human cognitive skills that are not innate but the result of repeated social interactions among agents (Ambrosino, 2006, 2012b). Institutions have the task of both constraining and driving human action. They imply some restriction on the choice set available to agents, but they also make available some choice options that otherwise would not be possible to choose (North, 1990). In doing so, institutions mold agents' aspirations (Hodgson,

4 Coase's work is developed by new institutional economics and L&E. NIE, following Coase's comparative analysis of institutions, ignores their complementarities, and underestimates that costly institutions have to be substituted in a costly institutional framework. NIE fails to develop a historical/evolutionary approach to the analysis of economic systems (Pagano and Vatiero, 2014). L&E includes Coase's main contributions in its formal model but ignores the legal comparative and contextual dimension of his analysis (Frischmann and Marciano, 2014).

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2004, 2006). On the other hand, agents themselves have an active role in institutional change and evolution. Whenever the environment changes, they become actors promoting the slow process of institutional change (Ambrosino, 2006, 2012b). This implies the existence of a reciprocal causation process between individual behavior and the rise and evolution of social institutions. Social norms emerge as the result of human action and continuous feedback between agents and the environment. Social norms change through a slow process of cultural selection that allows the emergence of efficacious norms able to maintain social order (Hayek, 1988). To understand both the nature and the evolution of social norms, CE studies the micro-foundations of human behavior as the key elements in the social interaction processes essential for reciprocal causation between human behavior and institutions (Hodgson, 2003, 2007). As suggested by Denzau and North (1994), there is a strong link between mental models and the institutional and cultural context. Hence, understanding individual mental processes requires explaining the rise and the evolution of institutions and social norms. CE of institutions stresses and investigates the role of (social, cultural, economic) context in the process of institutional change and in explaining how institutions come to light. In that sense, the cognitive approach to institutions shares some point of contact with the Coesian approach and new institutional economics. But CE doesn't neglect the complexity of the issue in hand and the need of a historical/evolutionary approach (Pagano and Vatiero, 2014). It provides interesting tools to investigate the choices among alternative institutions that occur in a costly institutional framework characterized by numerous institutional complementarities.

CE of institutions introduces a revision of the neo-classical assumptions and methodological tools. Most of all, the cognitive approach to institutions conducts an interdisciplinary inquiry based on empirical and experimental research (Ambrosino, 2006, 2014). CE has contributed to formulate new and consistent hypotheses on decision-making processes. Even if we are still far from a normative theory of human choice,[5] CE has started to explain the processes leading to the emergence of institutions by means of theoretical tools like path dependence (Rizzello, 2003). It has demonstrated the importance of learning processes in the emergence of norms and their social spread (Ambrosino and Lanteri, 2007; Merlo and Schotter, 1999). It has shown the importance and the complexity of coordination processes in shaping institutional behavior (Ambrosino, 2013; Schelling, 1960). More contributions are offered by the neuro-economic approach, that contributes in the understanding of mental processes and their representation (Camerer *et al.*, 2005; Glimcher *et al.*, 2009; Kahneman and Frederick, 2002). What emerges is that decision-making processes are highly complex and that choices result from the interaction between

5 Of different opinion is Camerer (2007, 2008).

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perception and conscious reasoning.[6] CE of institutions grounds its investigation on a theory of human nature originating from Hayek's theory of mind and improved by Veblen's instinct-habit theory (Ambrosino, 2012b; Rizzello, 2003), by Bandura's theory of social learning (Ambrosino, 2006), and by more recent developments in psychology, anthropology, and neuroscience. This theory of human nature exhibits close connections with that underlying OIE (Ambrosino, 2006, 2012b, 2014). These connections are due to two main factors: first, CE and OIE shared the rejection of the neo-classical assumption of homo-economicus; secondly, they are due to the role that the tradition of the Old Institutional School plays in the development of CE. Most human behavior, according to the institutional view, is habit-driven and culturally regulated. Agents' behavior is not immutable; it can change according to the reaction of instincts to external stimuli. OIE endeavors to explain: (1) how habits come to be established, and the role of instinct and culture in the formation of habits; (2) the process by which habits of behavior, and of thought change; (3) the correlation observed in the personal habits of those belonging to a given culture, social class, age group, or other relevant categories. Institutional theory explains these three points by means of a concept of human nature, which is known as the *I-H-C theorem* (Brown, 2007). This theorem is the result of long discussion of the institutionalist concept of human nature since the time of Veblen until recent years. Institutionalists do not speak with one voice, but the differences of opinion concern the extent to which there is a dichotomy (referring to Ayres's dichotomy between technological and ceremonial behavior (Ayres, 1961)) in the nature of human beings. These are differences of degree rather than substance (Jensen, 1987). The institutional theory of human behavior is firmly based on three main ideas: natural selection, heredity, and variation. These ideas are linked to Darwin's theory of evolution, and they enable explanation of the three points listed above (Brown, 2007). OIE approach to economic change and evolution is Darwinian in the Veblen tradition. Veblen considers Darwinism not merely as a biological but also as a philosophical and methodological creed (Hodgson, 1998). His idea of economics as a complex science is in strong opposition with neo-classical economics. Economic evolution implies cumulative causation: the process of cumulative change, that is to be accounted for, is the consequence of a change in the method of doing things (Veblen, 1898, p.387). In the perspective of OIE, a Darwinian evolutionary approach cannot assume an inert and immutable human nature (the perfect rationality assumption), on the contrary, economists must focus on change in habits of thought in economic communities and on the impact that social institutions have on the behavior of individuals by modeling their way of thinking and handling things (Vromen, 1995, 2013). A socio-cultural environment that is continuously evolving largely determines agents' behavior. The socio-cultural individual pursues a multiplicity of goals

6 See Kahneman and Frederick (2002).

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and objectives (Jensen, 1987, p.1069). Hence, OIE uses research tools different from the apparatus employed by neo-classical economists to make predictions. OIE asks for a re-articulation of its research tools so that the complexity of social life can be explained properly: successful behavior depends on learning processes and particularly on social learning; the repetition of successful behavior leads to habit formation; institutional factors define the range of possible behaviors. What emerges is a close interconnection among agents, habits, and institutions. In this interconnection, CE of institutions shares the multiplicity of foci and avenues of inquiry of the OIE. Cognitive institutional economics adopts Hodgson's idea of a *reconstructive downward causation* process that links institutions and agents (Hodgson, 2003b), and it contributes to explaining this relationship (Ambrosino, 2006, 2012b, 2013).

The debate on the consistency of the standard assumptions of L&E has not paid much attention to CE of institutions (nor to OIE). One reason for this may be that the definition of norms on which the CE of institutions is based does not coincide with the concept of law that is the focus of L&E. Cognitive theory of institutions shares Hayek's definition (1952, 1960, 1962): institutions are those behavioral routines that become binding not because they are imposed by a legislator but because of the process of cultural selection and social interaction, through which they are selected (Hayek, 1962). As suggested by Hodgson, a 'rule is broadly understood as a socially transmitted and customary normative injunction or immanently normative disposition that in circumstance X do Y' (Hodgson, 2006, p.3). This does not mean that there is no need for a legislator (Ambrosino, 2014); rather, it means that the efficacy of norms is not the result of planned action by the legislator but depends on how agents have perceived and applied those norms. The durability of norms of behavior stems from the fact that they create stable expectations about the behavior of others. Once again, CE conception of law relates back to the Old Institutional tradition. Many institutionalists, including Hamilton, Clark, Commons, and Hale, had significant and explicit interests in L&E. The major source of such interest derives from Ely and Adams. Many topics, such as the evolution of property rights, the legal context of transactions, intangible property and goodwill, valuation of public utilities, and many others, were covered (Rutherford, 2001). Nonetheless, in the Old Institutional tradition (and in the OIE), the analysis of institutions in not limited to legal norms and formal rules. There are many types of institutions that emerge and evolve in different ways. Some institutions appear and develop with little or no planning or state inference. The role of the state is nevertheless important because an institution reaches an important stage of development when it becomes consciously recognized and legitimated by other institutions (Hodgson, 2002). This argument does not imply that the state is a more efficient solution than the bottom-up process of evolution of institutions. It suggests that the state can perform a regulatory role (Hodgson, 2002). By contrast, L&E has a restrictive conception of law. Law corresponds to legal norms, legal

rules, established by the state. L&E both evaluates the efficiency of legal norms and develops a normative legal theory to promote allocative efficiency. Law is a system of rules and guidelines enforced through institutions. It is given exogenously by the legislator in order to maximize social welfare by promoting Pareto efficiency – or at least the weaker Kaldor–Hicks conception of efficiency. Hence, society has efficient rules because there is an efficient legislator who understands and plans legal norms able to maximize social welfare. Another possible explanation resides in the different aims of CE and L&E. The cognitive theory of institutions seeks to understand and explain the cognitive processes leading to the emergence of social norms; its analysis is therefore essentially a positive one. Whilst L&E has both a positive and a strong normative aim. Positive L&E investigates the effects of existing legal rules in terms of their efficiency, while the purpose of normative L&E is to build a more efficient legal system in order to maximize social welfare. It is more interested in formal models, in which behavioral assumption can be included, and which may make predictive results possible.

3. Mitchell's main criticisms of the assumptions of behavioral law and economics

BL&E has introduced into legal theory the tools and the insights furnished by behavioral economics. Consequently, it is not surprising that BL&E now exhibits the same limitations as behavioral economics in developing new models with which to explain and predict the complexity of human behavior (Ambrosino, 2012a).

One of the main criticisms brought against behavioral economics concerns the idea widespread in the discipline that it is possible to incorporate the complexity of the cognitive determinants of human behavior into the standard formal models of the neo-classical approach. The idea is that the assumption of perfect rationality can be easily replaced with a new concept of rationality that better explains the complexity of real decision-making processes. Hence, behavioral economics returns to being a research approach completely compatible with mainstream economics (Davis, 2013). This tendency to build formal models, in which the existence of deviation from the perfect rationality assumption is explained by introducing new variables corresponding to particular biases assumed as commonly shared among agents, has also taken place in the behavioral approach to L&E (Jolls, 2007; Korobkin and Ulen, 2000). This replacement of the perfect rationality assumption guarantees that BL&E models, compatible with the mainstream, produce strong normative outcomes. BL&E has two aims: first, to explain why people do not act as they should (the benchmark being that agents should behave as the perfect rationality assumption expects); second, 'propose a form of paternalism, libertarian in spirit, that should be acceptable to those who are firmly committed to freedom of choice on grounds of either autonomy or welfare' (Sunstein and Thaler, 2003, p.1160). BL&E

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describes a model of the individual that can be easily ascribed to the mainstream economic assumption (Davis, 2013; Fontana, 2010).

Gregory Mitchell conducts a forceful critique against this trend and the normative models that have been developed. His first criticism of BL&E concerns the way in which scholars working in this field introduce into their inquiries insights drawn from the cognitive and psychosocial research of the past 30 years (Mitchell, 2002a, 2002b, 2003). BL&E derived from the evidence of the existence of cognitive biases in human behavior, and that these biases are widespread in the population and are responsible for predictable and systematic errors (Jolls *et al*., 1998; Korobkin and Ulen, 2000). But BL&E scholars fail in their attempt to criticize the perfect rationality assumption because their models do not develop a new concept of rationality including the complexity of human decision-making processes. They simply substitute the perfect rationality assumption with an assumption of 'equal incompetence' (Mitchell, 2002a). Empirical research has shown homogeneous behavioral tendencies among agents. These behavioral tendencies in BL&E represent a sort of list of common deviations from rationality that characterizes the entire population. Assuming equal incompetent agents, BL&E can develop normative models prescribing how agents have to behave and how decision-makers can intervene to shape agents' behavior and avoid their errors. This literature overlooks the substantial empirical evidence that people are not equally irrational and that human behavior is strongly influenced by situational variables (Hamilton, 2000): 'The only way the lessons of behavioral decision research on bounded rationality can be manageably incorporated into behavioral models for use in the law is if these lessons apply widely and uniformly. If the rationality of behavior depends on particular characteristics of the legal actor or on even just a few characteristics of the situation in hand, then the development of behavioral models that are both realistic and predictive becomes enormously complex' (Mitchell, 2002a p. 83). Mitchell (2003a, 2003b) stressed the need for a legal theory focused on finding solutions to specific problems rather than on developing a general model of legal behavior. For this purpose is necessary a contextualist approach in which behavioral regularities are analyzed with respect to discrete legal contexts. Mitchell (2003b) augmented his criticisms of the equal incompetence assumption by referring to the BL&E literature that assumes computational irrationality on the part of judges[7] and juries (Guthrie *et al*., 2001; Sunstein, 2000). BL&E portrays judges and juries as 'cognitive misers' to signify that they are not fully rational actors and that their decisions are based on heuristics and affected by biases. This literature

7 Judges need the illusion to based their decisions on logical reasoning (Holmes (1894): 'perhaps one of the reasons why judges do not like to discuss questions of policy, or to put . . . a decision in terms upon their view as lawmakers, is that the moment you leave the path of merely logical deduction you lose the illusion of certainty . . . ' (p.7). If the normative BLE is aimed at allowing judges to maintain the logical control of their reasoning, it needs the rationality assumption.

relies on the findings of cognitive and social psychology in regard to heuristics and biases (Fiske and Taylor, 1984; Worthington *et al.*, 2002). 'People are by nature "cognitive misers" .... when presented with complex information that they cannot easily understand, they tend to use cognitive shortcuts or heuristics to assists in their decision-making processes' (Worthington *et al.*, 2002 p. 157). Shortcuts and heuristics induce judges and juries to answer new questions with solutions already experienced in similar circumstances and to repeat their behavior. In this literature, the common use of heuristics is a basic feature of human judgment and it leads to systematic biases and errors.

BL&E scholars do not understand that heuristic processing is only one mode of thought and that agents often do not act as cognitive misers. The attractiveness of the cognitive miser metaphor is due to the fact that heuristics provide efficient means with which to solve numerous and complex situations involving limited mental resources (Tversky and Kahneman, 1974; Tversky and Kahneman, 1981). Heuristics can lead to favorable solutions but in many cases they can also give rise to biases and errors. Drawing on the evidence in support of cognitive heuristics provided by studies demonstrating that behavior is –under certain conditions and for some persons – more consistent with a heuristic rather than analytic mode of information-processing (Kahneman and Tvresy, 1982), the BL&E literature argues that biases and errors in judgment occur systematically and predictably when they really arise from cognitive heuristics.

BL&E relies on the results obtained by behavioral research developed in other branches of economic theory and generalizes their significance. One of the main contributions on which the use of the 'cognitive misers' metaphor in legal theory is based is the pioneering work of Tversky and Kahneman (1974). These authors argue that their 'studies on inductive reasoning have focused on systematic errors because they are diagnostic of the heuristics that generally govern judgment and inference' (1974, p.313). But this does not mean that the so-called 'K–T man' can be reduced simply to the use of rules of thumb and heuristics in judgment. It seems an excessively simple explanation of human decision-making. Mitchell (2002a, 2002b) argues that an individual's behavior lies somewhere between the extremes of perfect rationality and equal incompetence,[8] and it is not predictable with respect to different situations and contexts: 'the likelihood that a particular decision or judgment will deviate from the ideal behavior derived from norms of rationality depends on a range of personal and situational factors... Even inside the relatively controlled environment of the laboratory, we see considerable variation in cognitive performance among individuals depending on their cognitive abilities, educational background, and affective state' (2002a, p.109) Legal scholars should not seek a general model of judgment and decision-making; rather, they should develop a contextualist approach that seeks to identify the conditions under which irrational behavior

8 See also Schelling's (1960).

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occurs. This is a necessary step towards developing possible remedies through education, incentives, reconfiguration of the judgment or decision framework, or other forms of intervention.

The critiques to BL&E investigations in judges and juries decision making processes, contributes to a better understanding of the processes of law creation in the civil law countries. Mitchell underlines how decision-making processes are complex and context dependent, and provides relevant clues questioning the efficiency of law emerging from both judges' deliberations and politics' activities. Since politics' activity as lawmakers implies a political arena and coalitions and collective rationality, consider law creation as simply the outcome of shortcuts and heuristics necessarily disregard the complexity of the relationship between interest group and politics, and the influence of many other relevant interdependent factors that lead to the emergence of specific rules. Particularly politics and policies are strongly interconnected with corporate governance structures and the circularity of their relationship strongly influences the emergence of legal rules (Roe and Vatiero, 2015).[9]

Mitchell (2003b) argues that there are three empirical claims in the extension of heuristics and biases research to legal judgment that BL&E scholars use to criticize L&E. First, they focus on the idea that the common use of heuristics leads to systematic biases and errors in judgment (Jones, 2001). Second, they refer to this literature to argue that the use of cognitive heuristics is a basic feature of human judgment. Third, they refer to the evidence that the heuristic mode of processing is the default mode and that it is often quite difficult or even impossible to override (Sunstein, 2002). Together, these three claims constitute a strong argument for the development of a normative legal theory that overcomes the existence of predictable limitations in legal judgment. They also support the need for a sort of anti-antipaternalism: that is, the idea that errors in judgment can be eliminated also by libertarian paternalism (Jolls *et al.*, 1998; Jolls and Sunstein, 2006).

Contrary to this literature, Mitchell shows that the cognitive miser model has important normative, methodological, and empirical limitations that prevent research in law from achieving descriptive and predictive accuracy. The libertarian paternalism suggesting that planners can improve social welfare by setting default rules that create benefits for those who commit errors but cause little or no harm to those who are fully rational (Sunstein and Thaler, 2003) assumes the pervasiveness and permanence of irrational tendencies but ignores less invasive forms of intervention that may help agents overcome their errors without altering the substantive rights of the parties (Mitchell, 2005). Mitchell argues that describing behavior as rational or irrational requires a normative standard against which the behavior may be judged (2003b). Behavioral economics assumes that rationality requires logical consistency and coherence in the formation and ordering of beliefs and preferences (Kahneman,

9 See Roe and Vatiero (2015).

1994; Simon, 1997). Standard economics assumes that consumers behave *as if* information is processed through perceptions and beliefs using strict Bayesian statistical principles (McFadden, 1999). Rationality as coherence operates as a closed system. This means that the individual defines goals and beliefs so that behavior must be logically consistent and coherent with respect to those goals and beliefs. In the case of legal judgment, when evidence of an irrational judgment is found, many different explanations are possible, some of which make the irrationality of the decision questionable: 'to reach a valid conclusion about irrationality of behavior requires attention to a larger context in which the behavior occurs: what did the judge understand the task or problem to be, what goal did the judge have, and what rules or algorithms did the judge try to apply in solving the problem?' (Mitchell, 2003b, p.31).

Mitchell's second main criticism concerns the methods employed to test for cognitive biases and errors (Mitchell, 2002b, 2003b). BL&E research underestimates situational and individual variations in behavior and employs relatively weak tests of the hard core assumptions of the cognitive miser model. The point is that the core of the research in heuristics and biases is based on statistical significance tests on experimentally-generated and aggregate data. This body of research provides an interesting set of findings in general terms but with unspecified practical implications. In fact, its aim is to formulate in general terms the conditions under which events of various sorts occur (Nagel, 1979), and behavioral research on judgment is concerned with people in general. In the tradition of experimental analysis of decision-making, the judgments obtained are summarized by averaging across all the experimental subjects. If individual differences among judges emerge, these differences are treated as 'errors', and an 'average judge' is considered the most meaningful summary of judges. This approach has the advantage of ensuring generalizability. Therefore, rather than examining individual variation in judgment and choice, behavioral decision theorists typically assume that 'to a first approximation, the thought processes of most uninstitutionalized adults are quite similar, and any variation in subjects' responses is attributed to measurement error or random variance' (Mitchell, 2002b, p.46). The rigor of experimental research is purchased at the price of generalizability of results and this trade-off operates most directly in those fields that use laboratory experiments to study how humans navigate complex social environments like BL&E. Mitchell (2012) replicates Anderson *et al.*'s (1999) study on the generalizability of psychological laboratory research, using a larger data set to determine whether the external validity of laboratory research remains defensible or whether there are identifiable patterns of external validity variation. His analysis points out that 'the meta-analytic estimates of effects across research settings provide a good first test of the generalizability of laboratory results, but the limits of this approach must be acknowledged. The inferences to be drawn from positive results are limited by the diversity of the participant and situation samples found in the synthesized studies, and negative

results require deeper inquiry into the causes of external invalidity' (2012 p.110). The external validity and generalizability differ across psychological subfields and across research topics within each subfield. Once again different contexts generate different results. The pattern of results suggests that there are systematic differences in the reliability of laboratory results across subfields, research topics, and effect sizes; particularly it depends on the representativeness of the laboratory studies synthesized in the meta-analyses that provide the data used by the study (Mitchell, 2012).[10]

Finally, Mitchell points out some empirical shortcomings. He criticizes the assumption of universality in cognitive processing underlying the use of the nomothetic approach by many psychologists and scholars in BL&E, and the idea that differences in behavior are little more than random error variations that can be controlled by using random assignments to experimental conditions. The idea that the mind is a sort of machine that is the same in all times and places dominated the cognitive view until recently (Fiske *et al.*, 1998). More recent studies on judgment provide strong evidence that this assumption is not universally correct (Nisbett, 2003).

4. Mitchell's contribution to a new legal theory

Mitchell's critique is the preliminary step in understanding his suggestions to develop a new legal theory in which the peculiarity of decision-making in legal contexts can be really explained. The critique of the equal incompetence assumption suggests the need for a new analysis in which heterogeneous agents are considered (Mitchell, 2002a, 2002b, 2003a, 2003b). This aim could be achieved by suggesting a constructive pattern of research showing which contextual features may be considered to model legal judgment. Mitchell – referring to most of the same literature as cited by BL&E – argues that agents deviate from perfect rationality, but they do so in different ways and in different contexts (Mitchell, 2003a). Evidence on cognitive biases must be investigated in legal contexts so as to build an original and consistent map of evidence. A contextualist approach does not mean that each decision or judgment can be only analyzed with respect to its uniqueness and hence related only to its micro-foundations. A contextualized approach acknowledges that features of the person, the situation, and the task have an impact on the nature and quality of judgment, and its aim is to find the information really needed to understand if the use of heuristics must be contrasted by introducing specific regulation

10 Mitchell's discussion is related to the debate in psychology about the danger of relying on 'statistical significance' as a measure of behavioral tendencies. Scientists (and journals) publish studies that 'work' and place those that do not in the file drawer (Rosenthal, 1979). One answer to this problem of publication bias is that we can trust a result if it is supported by many different studies (Ioannidis, 2008). But this argument breaks down if scientists exploit ambiguity in order to obtain statistically significant results (Simmons *et al.*, 2011).

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changes: 'an identification of particular types of person or groups of persons making particular types of judgments or decisions in particular settings who are most likely to engage in irrational thought processes that have adverse effects for themselves and others in light of their goals *versus* their outcomes, an identification of the frequency with which these irrational thought processes lead to net personal and/or social cost, an identification of means to overcome or avoid this unwanted irrational behavior' (Mitchell, 2003b, p.23). This approach starts from the goals and the beliefs of the decision-maker and then examines if the final decision achieves those goals and beliefs given the environment constraint.[11] This means that rationality cannot be judged in abstract: in fact, a behavior that is irrational in one situation may well be rational in another. A behavior in a particular context may be at the same time rational and irrational depending on the goals, the interpretation of the situation, and the tools used by any agent involved in the decision-making process. Behavioral research on heuristics and biases shows that judgment is sensitive to certain situational factors (such as frame, Tversky and Kahneaman, 1974) or to salient aspects of the environment (Schelling, 1960), but rarely does this research consider the effect of the larger 'social frame' (Mitchell, 2003b). Empirical legal research may obtain positive results by shifting from the metaphor of experimental psychology as a science aimed at finding effects with identifiable causes to that of the cartographer who seeks to draw an accurate and detailed, yet still abstracted, map of some segment of the world of legal behavior.

Experiments are only one of the tools that can be applied to examine variations in individual behavior. The need for an interdisciplinary approach arises from the recognition that multiple forces combine to produce particular behaviors.

Mitchell (2009), discussing the role of second-level thought in shaping human behavior, contributes to the development of the new legal theory and furnishes insights for developing further research. The starting point is the fact that legal theory has criticized the traditional model of the 'intentional actor' who controls his/her thoughts and behaviors if motivated to do so. Part of the literature substitutes this model of the intentional actor with that of the 'unintentional actor', deriving this idea from analyses of discriminatory behavior (Hamilton Krieger, 1995), while BL&E describes judgment as the product of a non-deliberative thought process based on cognitive heuristics and rules of thumb. This literature is based on psychological models of actors which show that biases in judgment and errors often arise at the level of first-order thoughts: thoughts that occur at the direct level of cognition and are not intentional and not deliberative (Petty and Brinol, 2008). These models assume that agents are incapable of going beyond these first-order thoughts and that this is the cause of irrational and discriminatory behavior. This literature emphasizes the role of automatic and intuitive thoughts while neglecting the role played

11 See Gigerenzer (2014).

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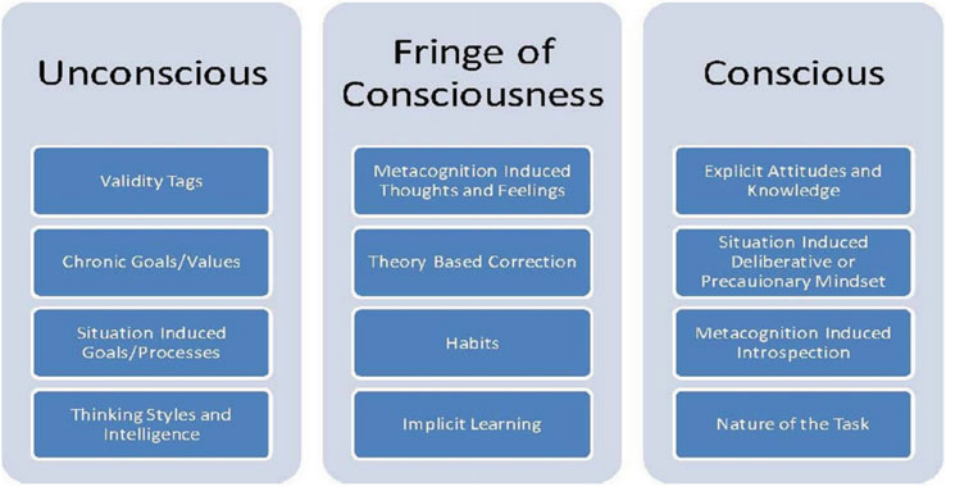
Figure 1. (Colour online) Mitchell's process of self-correction. *Source:* Mitchell (2009) p.14.



in decision-making by controlled and deliberative thoughts. It leaves little if no room for self-correction, arguing that individuals lack self-awareness of their biases, and it ignores the substantial evidence that agents learn through experience, that their initial judgments should sometimes be distrusted, and that they develop different techniques for employing second-order thoughts in order to overcome undesirable first-order ones. Second thoughts may be the products of conscious effort, but they may also be automatic corrections working at the unconscious level. The propensity to engage in self-correction (through both conscious deliberation and implicit adjustments) varies among persons and situations, but all cognitively normal people are able to engage in some amount of 'metacognition' about their own thoughts (Loires, 1998). People may differ in their propensity for such reflection depending on their education, upbringing, values, or genetic endowment, but everyone possesses some level of ability in rethinking their own thoughts.

Self correction can be better explained if the sharp distinction between conscious and unconscious processes drawn by BL&E is replaced with the idea that self-correction phenomena are described by a three categories model (Figure 1) in which the boundaries are porous and phenomena assigned to the different categories are capable of occurring at different levels of consciousness depending on the circumstances of the particular decision problem. The sources of self-correction (Mitchell, 2002a, 2009) override the distinction between System I and System II applied by BL&E and derived by Kahneman and Tversky (Evans, 2008).[12] This is so because the second thoughts may occur within each system.

12 See Kahneman and Frederick (2002).

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This argument sets aside the generally accepted view that deliberative processes (System II) under certain circumstances debias intuitive (System I) processes. Mitchell's self-correcting second thoughts may appear to pertain to System II, but they are not assumed to require conscious effort or deliberation (2009). Agents' ability to avoid biases depends on both individual pre-disposition and the influence of the concrete situation. While individual pre-dispositions operate largely beyond consciousness, situational influences operate both above and below the threshold of consciousness. Understanding how second-order thoughts interact with first-order ones in legal contexts is of interest because it may enable better prediction of when biases will result in unwanted behaviors and what kinds of debiasing efforts are likely to be successful. Mitchell discusses the importance of second thoughts in the correction of biases in the domain of rationality and interpersonal relations, and he considers the implications of this inquiry for legal theory and law-making. The analysis of second thoughts acquires particular importance for understanding inter-group bias and discrimination, and their regulation. Not considering the existence of second thoughts leads to the false idea that 'the expression of a first order bias in one time or in one setting will generalize to other times and settings' (2009 p.29). First-order biases are extremely sensitive to personal features and context; hence they cannot be considered stable cross-situational preferences (Ayres, 2001). From the perspective of the regulation of discriminating behaviors, the fact that first-order biases may arise without consciousness does not mean that regulation to prevent intentional discrimination will not be effective. Prohibitions against intentional discrimination can remedy unconscious biases. The existence of explicit norms requiring conscious meditation on thoughts and behaviors can have positive effects. 'Conscious attention to law's prohibitions may, of course, lead to online monitoring of our behavior for bias, but conscious thoughts about the appropriateness or inappropriateness of certain consideration may lead to offline debiasing as well, through the creation of metacognitive validity tags' (Mitchell, 2009 p.35). Mitchell suggests a metacognitive approach to regulation. Law will not simply change the prices of different behaviors for the purposes of a rational analysis of the costs and benefits of different courses of action. Rather, law will focus on altering the ways in which agent processes information. Law can be shown to be a system of second thoughts – functioning both consciously and unconsciously – that can contribute to influencing thoughts and behaviors in legal contexts. Mitchell provides concrete applications of his theory of law. The author (Mitchell, 2010; Mitchell *et al*., 2011; Monahan *et al*., 2009) enters the debate on the proper scope of expert witness testimony that purports to summarize general social science evidence to provide context for the fact-finder to decide case-specific questions. Mitchell starts from the Dukes v. Wal-Mart case on gender discrimination toward female employees. Dukes' plaintiffs submitted expert statistical evidence showing that female employees were faring worse in the aggregate than male employees, and a report by a social science expert

identified a common source of this discrimination across all Wal-Mart facilities (Mitchell, 2010, p.136). The social science expert based his report on the 'social framework analysis' method (Fiske and Borgida, 1999). This method consists in using social science research as a framework for analyzing the facts of a particular case. The reliability of such analysis is based on the reliability of the research on which the general conclusions applied to the case in hand are based. In Dukes v. Wal-Mart, the expert summarized research on gender bias, organizational culture, and anti-discrimination measures, and applied it to interpret the facts in the discovery material supporting the claims of the Dukes plaintiffs. Mitchell argues that testimony based on that social framework analysis should be restrained from making any linkage between general social science research findings and specific case questions. In the specific case of Dukes v. Wal-Mart, he based his critique on two main points: (1) in social framework analysis, experts use their personal judgment rather than scientific method to link social science to specific cases; in some sense, social framework analysis make the same mistake that BL&E does in extending the experimental economics results to its research purposes without dealing with context-specific research; (2) the expert corroborated his report with statistical evidence. But the statistical evidence was itself subject to dispute with regard to the proper unit of analysis. The plaintiffs argued for an aggregate-data approach. This choice did not allow consideration of context-specific differences due to store-by-store variation in male–female outcomes and to local control over personnel matters. Moreover, this use of statistical evidence is a concrete example of how statistical results can vary depending on the many decisions that researchers have to make while collecting and analyzing data (which outliers to exclude, which measures to analyze, and so on). Mitchell argues that there are social science techniques and methods that allow development of opinions about the parties or behaviors involved in a particular case; such evidence has been referred to as 'social facts' (Mitchell *et al.*, 2011; Mitchell *et al.*, 2010). Social facts are special types of adjudicative facts produced by applying social science techniques to case-specific data in order to help prove some issue in the case. A wide variety of social science methods can be used to produce social facts. The design of a social fact study depends on what a party hopes to learn. Mitchell divides the search for social facts according to three main goals: (1) Obtaining descriptive information: getting the facts right is important, but doing so can be difficult when the relevant facts are in the possession of a large number of non-parties; (2) Obtaining explanatory information: gain a better understanding of the issue in a case. Many research methods can be applied, such as interview, survey, observational study, experimental simulation; (3) Testing specific hypotheses: the ideal way to test causal hypotheses is through the use of experiments in which participants' behaviors are recorded to assess how changes in the experimental conditions affect the behavior in question (Mitchell *et al.*, 2011). Social facts constructed by a proper scientific method possess scientific reliability and fit the facts of a

particular case. Such reliability depends on the reliability of the scientific method applied. Mitchell shows that when addressing such a complex task as deciding a legal dispute, it is necessary to rely on rigorous interdisciplinary research tools that help prove some issue in the case.

5. Cognitive legal theory: new opportunities

Mitchell's works today represent the most important attempt to develop a proper cognitive legal theory that shares the aims and the scope of the cognitive approach to economic institutions and that is also coherent with the tradition of the Old Institutional School and with OIE.

The cognitive theory of institutions developed on the basis of the idea that it is not possible to separate investigation into the rise and evolution of institutions from the analysis of individual decision-making processes (Ambrosino, 2006, 2012b; North, 2005). The institutional and the individual levels of analysis are closely interconnected, so that an institutional change may be the starting point for modification of agents' behavior, and new cognitive classifications or new routines of behavior can engender a slow process of institutional change (Ambrosino, 2006, 2012b, 2014; Hayek, 1982; Hodgson, 2004). The cognitive theory of institutions starts its inquiry assuming that agents are heterogeneous; heterogeneity means that agents can exhibit different behaviors even if they belong to the same social and cultural context. That heterogeneity is not an insuperable barrier to coordination because agents are different but made up of the same ingredients (Hayek, 1982). They are able to understand each other, to build correct expectations about each other's behavior, and to share common social norms. The shared social context, the existence of strong learning processes in society, and the importance of past experiences in shaping human behavior are the main factors responsible for the slow process of institutional change both in the CE of institutions and in OIE (Ambrosino, 2012b, Brown, 2007, Jensen, 1987). The foregoing review of Mitchell's main works seems to represent the main contribution to develop inquiry into the 'individual-institution' framework already described by the cognitive theory of institutions (Ambrosino, 2014; Hodgson, 2004). Mitchell's critique of BL&E 'provides reasons why legal theory should refrain from broad statements about the manner in which all legal actors process information, make judgments, and reach decisions and why others should be skeptical of such broad claims by the legal decision theorists' (2002b, p.33); 'legal decision theorists should recognize the need for greater caution and precision in drawing of descriptive and prescriptive conclusions from empirical research on judgment and decision making' (2002b, p.32). Mitchell's contribution is based on a strong belief in the utility of psychological and other empirical research for legal analysis. Mitchell seeks to qualify legal decision theory 'rather than reject it and is meant to point out areas in need of further investigation and consideration' (2002b, p.34).

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Mitchell's inquiry shares with CE the idea that agents are heterogeneous and that simply introducing the existence of 'standard' biases in modeling human behavior does not enable the development of efficient predictive models. He points out – like the cognitive approach and the OIE – that the perfect rationality assumption is not an appropriate instrument with which to investigate agents' behavior; a proper theory of human behavior is needed. The existence of cognitive biases in legal contexts must be investigated in the field and with respect to specific contexts through 'social facts studies' (Mitchell *et al.*, 2011). A social facts study applies different research methods to explain case-specific descriptive or causal claims, and it is focused on the context-specific features of the case in hand. Agents' legal behavior cannot be described as 'equally incompetent' on the basis of the evidence of the existence of deviation from rational behavior found in other disciplines. Mitchell thus shares the argument of CE and OIE that the analysis of normative behavior cannot be separated from social and environmental aspects or from cultural and relational ones, and that a multi-disciplinary approach is necessary to develop better inquiry into the complexity of decision-making processes in legal contexts. The aim is to explain the micro-foundations of normative behavior by applying the tools offered by different research approaches to the normative context. His idea of a new legal theory, in which the cognitive determinants of agents' behavior are investigated, highlights the importance of: (1) agents' cognitive pre-dispositions; (2) learning processes and the influence of past experience; (3) the role of context. The cognitive theory of institutions has already pointed out the importance of these three elements. Both the Old Institutional School (and today the OIE) and Hayek's legal theory have emphasized the importance of cognitive pre-disposition in normative behavior. The Old Institutional school of Veblenian tradition explains the relationship between economic and social institutions and *habits*. These are responsible for the strength, the normative power, and the duration in time of established institutions (Anderson, 1933). Hayek's legal theory focuses on the role of classification processes in shaping agents' behavior and the rise of shared social norms (1952, 1982). The importance of learning processes, and especially of learning from past experience, is a crucial aspect of Hayek's legal theory that has been developed by the cognitive inquiry into economic institutions (Hayek, 1982). The cognitive approach has suggested that the dynamics of social learning play a fundamental role in the diffusion of normative behaviors and in the evolution of social norms (Ambrosino, 2006; Bandura, 1977). The context plays a decisive role in these dynamic processes of the spread and evolution of social norms. Both the cultural context and the social context, in fact, are able to shape the direction in which the dynamic process of change will develop (Hodgson, 2003, 2004). As argued in the paper, learning, and especially social learning is a key determinant of institutional behavior also in the old institutional tradition and in the OIE.

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Mitchell's research approach starts with a 'cartographic' inquiry aimed at understanding and describing behavior in legal contexts (2003b). He begins by investigating the ability of agents to correct their behavior with respect to particular decision contexts, under the assumption that each particular context implies the development of different behavioral routines (Mitchell, 2004, 2009). Mitchell's inquiry enlarges the boundaries of the existing experimental literature on topics of interest to L&E and focused on decision-making under conditions of risk and uncertainty (Camerer, 1995), on the Coase Theorem (Hoffman and Spitzer, 1982), and on pre-trial bargaining (Loewenstein *et al*., 1993). Finally, Mitchell's approach offers an important instrument with which to develop cognitive inquiry into the diffusion of normative behavior and institutional change, and it can furnish key insights into the opportunities offered by the development of prescriptive rules in shaping individual behavior. What emerges is a new meta-cognitive approach to legal theory in which norms are concrete instruments with which to induce agents to develop different ways of processing information. Understanding human decision-making can furnish the legislator with the appropriate tools to develop normative instruments that prevent agents from committing errors. The analysis of second thoughts (Mitchell, 2009) suggests that normative constraints can contribute to make agents develop new cognitive classifications of the available information. The analysis of 'social facts' shows how to build appropriate decision tools based on objective casual claims with which to evaluate and create new rules of law. Moreover, Mitchell suggests an interesting way out of the impasse of the scant chances of developing normative models faced by the CE of institutions. In fact, his theory suggests a new way to apply scientific research results to normative purposes. What he suggests (Monahan *et al*., 2009) is that scientific results should constitute a sort of 'social authority': an organizing principle for courts' use of social science to create or modify a rule of law. Social research and legal theory partially lose the need to furnish normative models. They become the research instruments that give judges and courts, and more generally the legislator, the information and the tools with which to evaluate and create new rules of law. Such scientific results can be even more useful because they are the result of 'social fact studies' producing case-specific evidence through reliable social science principles and methods.

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