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# Regulatory Impact Assessment (RIA) and Behavioural Research: a New Perspective?

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## 1. Introduction

This essay will try to answer the following question: how the findings of the behavioural sciences can improve the quality of regulation?

The first part attempts to retrace the meaning of regulatory quality through its development in European Union Law: as a whole, on the base of directives, communications and reports, this principle is related both to companies' needs as well as to the economic environments in which business operators operate<sup>1</sup>. According to scholars, regulators should also focus on good regulation starting from the point of view of the people.

A new area of research indicates that regulation risks being poor, weak and ineffective if legislators do not reflect on how people *really* react, but rather only presume to know their reactions<sup>2</sup>. From this perspective, governments should recognise that individuals can assume unexpected behaviour or have other limitations; in other words, people have «limits and errors»<sup>3</sup>.

The second part of this essay explains how the *homo oeconomicus* theory – according to which people always pursue their own economic interest in a rational way – might be limited.

Cognitive science has shown that people are not always rational and are subject to recurring cognitive biases in decision-making<sup>4</sup>: people choose *status quo* for inertia or procrastination; people can be influenced by how data and information are *presented* and *organized*; individual behaviour is greatly influenced by the perceived behaviour of other people<sup>5</sup>.

The third part of the paper attempts to describe how these new behaviourally-informed regulatory approaches can be integrated into regulatory process. Within the cycle of regulation, the paper focuses on consultation and Regulatory Impact Assessment's (hereafter: RIA) roles in order to

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1 S. Labory and M. Malgarini, Regulation in Europe: Justified Burden or Costly Failure?, in, G. Galli and J. Pelkmans (eds.), *Regulatory Reform and Competitiveness in Europe, Usa*, Edward Elgar, 2001, pp. 81-127.

2 A. Alemanno and A. Spina, *Nudging Legally. On the Checks and Balances of Behavioural Regulation*, Jean Monnet Working Paper No. 06, 2013, p. 9 ss.

3 K. R. Popper, *In search of a Better World*, London, Routledge, 1994, p. 4 ss.

4 F. Di Porto and N. Rangone, *Cognitive-based regulation: new challenges for regulation*, in [www.federalismi.it](http://www.federalismi.it), n. 20, 2013, pp. 1-28.

5 G. Rizzolatti and L. Craighero, The mirror-neuron system, «*Annual Review of Neuroscience*», Vol. 27, 2004, pp. 169-192. Rizzolatti has discovered the mirror-neuron system in humans and it can explain how people perform in their environment. Briefly, humans observe an action done by another individual, and their motor cortex becomes active even in the absence of any overt motor activity. Humans learn without a logic inference, but rather thanks to special neurons that are present in the brain. The mirror-neuron system states that humans are influenced by other humans: for instance, if our friend has a great pain (suffering), also we suffer with him.

gather *real* information from stakeholders and to bring out limitations and unexpected behaviour.

In this analysis, the essay reports the U.S. case in which agencies have adopted the behavioural approach or, more precisely, an “empirically informed” regulation to face some human behaviour limitations. American agencies use some regulatory tools, such as disclosure, to organize the framing of information in a way which is clear and simple.

However, when legislators or decision-makers do not use regulatory tools, they can still use a kind of regulation integrated with a behavioural approach: the nudge regulation. This essay explains the nudge regulation in which a regulator, but not only, becomes a choice architect that utilises nudges to organize the citizens’ decision-making contexts. According to authors of nudging theory, a nudge can be well-represented by “a series of white stripes painted onto the road” that is able to advise the drivers to slow down and, in this way reducing the individual and social costs of accidents<sup>6</sup>.

Finally, the paper provides some nudge experiences by governments and private entities, it seeks to raise some questions about this theory, such as: competences required, limited freedom of end-users, the difficulty in defining a nudge precisely and so on.

## 2. Quality’s Regulatory Pendulum

Regulatory quality can be described by retracing its evolution within European Union Law: it was in the mid-1990s that the search for better quality regulation became systematic<sup>7</sup>.

Starting from the Molitor Report of 1994 which focuses on legislative and administrative simplification, Better and Smarter regulatory tools, Programmes for Reducing Administrative Burdens, Small Business Act and further policies have added rules, over time, all can serve as criteria for the assessment of regulatory quality, with particular regard to a reducing in *red-tape* to increase competitiveness<sup>8</sup>. The European Union recognizes regulatory quality as one of the key factors

6 D. Hartley, *Education and the Culture of Consumption: Personalisation and the Social Order*, Routledge, 2012, p. 71 ss.

7 R. Baldwin, *Better Regulation: Tensions about the Enterprise*, in S. Weatherill (ed.), *Better Regulation*, Portland: Hart Publishing Ltd, 2007, p. 29 ss.

8 H. Xanthaki, *The Problem of Quality in EU legislation: what on earth is really wrong?*, «Common Market Law Review», 38, 2001, pp. 651-676. C. M. Radaelli, *Whither better regulation for the Lisbon Agenda*, «Journal of European Public Policy», Vol. 14, 2, 2007, pp. 190-207.

to achieving competitiveness and attracting investments<sup>9</sup>, but it is necessary to direct the same attention at all stakeholders: citizens, consumers, employees and others<sup>10</sup>.

According to scholars, the challenge is to change the quality regulatory pendulum's direction and «to go back to Better Regulation and Smart Regulation and assess their success from the point of view of the citizens»<sup>11</sup>.

Moreover, this construction seems to converge on highlighting both rules which must be clear, coherent, and comprehensible (formal quality) and rules must be accountable and adequacy in the light of an assessment of less restrictive alternatives (substantial quality)<sup>12</sup>.

Substantial quality, in particular, requires that regulations should take into account both stakeholders irrational choices and consider risks linked to limitations to behaviour<sup>13</sup>. Without careful attention to cognitive errors, non-economic incentives and psychological processes that influence choices, the regulations risk being inadequate with respect to their objectives, with high and unjustified costs for all<sup>14</sup>.

In this way, the quality of regulations has also been measured in the light of its capacity to reduce behavior limitations which may be present in the choices of stakeholders<sup>15</sup>.

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9 S. Salvi, La qualità della regolazione in Italia tra buone intenzioni e modesti risultati: un confronto internazionale, in *La tela di Penelope. Primo rapporto Astrid sulla semplificazione legislative e burocratica*, a cura di A. Natalini e G. Tiberi, Bologna, il Mulino, 2010, pp. 61-85. M. Bianco et al., Concorrenza e regolamentazione in Italia, «Questioni di Economia e Finanza», n. 123, Aprile 2012, p. 13.

10 N. Rangone, The myth and reality of good quality regulation tools, in «Italian Journal of Public Law», (4), 2012, pp. 92-121.

11 H. Xanthaki, European Union Legislative Quality After the Lisbon Treaty: The Challenges of Smart Regulation, «Statute Law Review», Oxford University Press, 2013, p. 15.

12 M. De Benedetto, Maintenance of rules, CREI Working Paper no. 2/2014, p. 17 ss.

13 N. Rangone, Il contributo delle scienze cognitive alla qualità delle regole, in «Mercato concorrenza regole», XIV, 1, aprile 2012, pp. 151-166 ss.

14 N. Rangone, Il contributo delle scienze cognitive alla qualità delle regole, cit., pp. 156-157.

15 N. Rangone, Il contributo dell'economia comportamentale alla qualità delle regole, in *Atti del convegno Consob su: "Scelte di investimento e regole di tutela. Il ruolo della finanza comportamentale tra economia, psicologia e diritto*, Milano, 30 novembre 2010, pp. 1-8.

### 3. Homo Economicus and Real People

Researches in several fields of the sciences – behavioural economics, psychology, neuroscience, cognitive science – have demonstrated that the *homo oeconomicus* theory, according to which people always pursue their own economic interest in a rational way, needs to be revised<sup>16</sup>.

In the past, traditional economic theory postulated that an economic man was also a rational man<sup>17</sup>. This man was characterized by the following aspects: «utility maximization, stable preferences, rational expectations, well-informed on his environment and optimal processing of information»<sup>18</sup>.

Briefly, the traditional responses about consumer policy tend to refer to patterns of how decisions are made. This model - called “rational choice” - argues that end-users act utilising a proper cost and benefits analysis to maximize expected net benefits<sup>19</sup>. This paradigm has been enriched by behaviour researchers who have provided other information on *real* consumer behaviour; in fact, as we know, consumers do not always make the better choice for themselves or seek their own interests.

In general, the behavioural approach to distinguish between *real* and *economic* man utilises three bounds on human behavior: bounded rationality, bounded willpower and bounded self-interest<sup>20</sup>.

Bounded rationality is based on the assumption that human cognitive faculties are limited and people make judgment and decision-making errors<sup>21</sup>. People’s capacities do not permit them to respond at all problems in a proper way – people have memory lapses and untapped brain power

16 G. S. Becker, Irrational Behavior and Economy Theory, «The Journal of Political Economy», Vol. 70, No. 1, 1962, pp. 1-13. See also H. A. Simon, A Behavioral Model of Rational Choice, «The Quarterly Journal of Economics», Vol. 69, No. 1, 1955, p. 99. Herbert Simon, already in 1957, argued that «the concept of economic man needed a fairly drastic revision». F. Von Hayek, Individualism and Economic Order, The University Chicago Press, 1948, pp. 33-57. «Economists assumed that - under certain given conditions among which is one where people know everything (some economists used the pleonastic expressions as “given data”) - market is perfect. But this does not answer the question whether the same facts are known to all the different persons in the system or whether the “data” for the different persons may be different».

17 H. A. Simon, A Behavioral Model of Rational Choice, cit., p. 99 ss.

18 R. A. Posner, The Problems of Jurisprudence, Harvard University Press, 1990, p. 353 ss.

19 T. Jackson et al., Regulatory Review, P. Vass (ed.), The University of Bath, CRI, 2005, p. 154 ss. See A. Renda, Law and Economics in the RIA World, Intersentia, 2011, p. 149 ss. The Author has argued that «Individuals act irrationally in most circumstances; and markets follow the same track (think about herd behavior effects during the recent financial crisis)[...]»;

20 C. Jolls, C. R. Sunstein, R. H. Thaler, A Behavioral Approach to Law and Economics, «Stanford Law Review», Vol. 50, 1998, p. 1476 ss.

21 C. F. Camerer and E. Fehr, When Does “Economic Man” Dominate Social Behavior Science, «Science», Vol. 311, no. 57576, January 2006, pp. 47-52.

– and they use mental shortcuts to bridge a gap<sup>22</sup>.

Tversky and Kahneman, in their research programmes, argue that people tend to rely on heuristics or rules of thumbs to reduce complex tasks or simplify problems; in this way, using heuristics is linked to further biases and reasoning limitations<sup>23</sup>.

The heuristics can be described as following: (i) *Availability heuristics*: judgments about probability are often affected by whether a recent event comes readily to mind<sup>24</sup>. When people tend to think of a relevant example, it is all the more probable that they will be scared or worried. A familiar risk, like a terrorist attack is looked at as a greater risk than another, such as an excessively hot summer<sup>25</sup>. (ii) *Anchoring heuristics*: people begin with a first approximation, which is used as an anchor (an initial hypothesis), then they go on with following adjustments. For example, when individuals do not know the distance or the number of people found in a city, they use the anchoring biases to identify a solution<sup>26</sup>. (iii) *Representativeness heuristics*: in some cases, people use representativeness to judge probability. Representativeness is within a broad family of prototype heuristics, in which “properties of a prototypical exemplar dominate global judgments concerning an entire set”<sup>27</sup>. This heuristic, called “the law of small numbers”, uses stereotypes and the similarity criterion, while it abstains from calculating probabilities<sup>28</sup>.

As mentioned above, the literature has shown that a series of cognitive limits are due to use of a number limited of rule of thumb or heuristics. Among the most common cognitive biases: (a) *framing and presentation*: people tend to be influenced by the way in which information is presented and their choices do not depend solely by the consequences of their actions<sup>29</sup>. For instance, our perspective

22 C. Jolls, C. R. Sunstein, R. H. Thaler, *A Behavioral Approach to Law and Economics*, cit., p. 1477.

23 D. Kahneman and A. Twersky, *Judgment under Uncertainty: Heuristics and Biases*, «Science», Vol. 185, No. 4157, 1974, p. 1124 ss.

24 A. Tversky and D. Kahneman, *Availability: A heuristic for judging frequency and probability*, 5, «Cognitive Psychology», 1973, pp. 207-232.

25 J. A. Fanto, *Quasi-Rationality in Action: A Study Of Psychological Factors in Merger Decision-Making*, «Ohio State Law Journal», Vol. 62: 1333, p. 16 ss.

26 F. Lieder, T. L. Griffiths, N. D. Goodman, *Burn-in, bias, and the rationality of anchoring*, Stanford University, 2013, p. 6.

27 D. Kahneman and S. Frederick, *A model of heuristic judgment*, *The Cambridge Handbook of Thinking and Reasoning*, February 2, 2005, p. 296.

28 C. R. Sunstein, *Behavioral Analysis of Law*, Chicago Working Paper Law & Economics, 1997, p. 14 ss. See also M. Rabin, *Psychology and Economics*, «Journal of Economic Literature», Vol. XXXVI, March 1998, pp. 11-46.

29 Alemanno and A. Spina, *Nudging Legally. On the Checks and Balances of Behavioural Regulation*, cit.

changes if a doctor says that after a certain operation, 90 percent of patients are alive after five years or if he says 10 percent of patients are dead, all this can change the reactions of end-users; the way in which information are presented and structured has a relevant effect on human behaviour. (b) *Confirmation biases*: people have a tendency to overestimate information that reinforces things we already believe<sup>30</sup>. (c) *Loss aversion*: for most people, perceived losses weigh more heavily than equivalent gains<sup>31</sup>. (d) *Status quo bias*: in many settings, people appear to give more weight to the *status quo* than would be predicted by conventional models of rational choice<sup>32</sup>. (d) *Optimism or unrealistic optimism bias*: the tendency to be over-optimistic, overestimating favourable and pleasing outcomes. This bias is linked to the idea that people think about dangers - such as accidents, infections, disasters, crashes and so on - as something far from themselves. In other words, the finding is that humans overestimate the benefits of good events and underestimate the effects of bad events<sup>33</sup>. An example of unrealistic optimism bias is lotteries. In this case, many people have a firm belief, based on a wrong estimate of probabilities, that the fortune will change their way and that they will win<sup>34</sup>.

In addition to bounded rationality, people often display bounded will-power. This term refers to the fact that «human beings often take actions that they know to be in conflict with their own long-

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p. 9 ss. See C. F. Camerer and G. Loewenstein, *Behavioural Economics: Past, Present, Future*, in C. F. Camerer, G. Loewenstein, M. Rabin, *Advances in Behavioural Economics* (eds.), Russell Sage Foundation, 2004, pp. 3-40. «The classical example of framing effects is the Asian Disease problem in which people are informed about a disease that threatens 600 citizens and asked to choose between two undesirable options».

30 M. Rabin, *Psychology and Economics*, cit., pp. 26-27. An example of confirmation bias is the following: «48 students were recruited to participate in an experiment: twenty-four of them were favourable to capital punishment and twenty-four of them were contrary to capital punishment. Then, the researchers distributed the same documents on capital punishment to the two groups in order to estimate how reading of studies moved the attitudes of two groups toward the death penalty, and how they changed their beliefs regarding its deterrent efficacy. The result is that those who were proponents of the death penalty became on average more in favor of the death penalty and believed more in its deterrent efficacy, while opponents became even less in favor of the death penalty and believed even less in its deterrent efficacy».

31 D. Kahneman, J. L. Knetsch, R. H. Thaler, *Anomalies: The Endowment Effect, Loss Aversion, and Status Quo Bias*, «The Journal of Economic Perspectives», 5(1), 1991, p. 199 ss.

32 C. R. Sunstein, *Endogenous Preferences, Environmental Law*, «Journal of Legal Studies», 22, 1993, p. 13.

33 M. Adler and E. A. Posner, *Happiness Research and Cost-Benefit Analysis*, «Journal of Legal Studies», vol. XXXVII, June 2008, pp. 253-291.

34 C. Camerer et al., *Regulation for conservatives: Behavioral economics and the case for "asymmetric paternalism"*, «University of Pennsylvania Law Review», 2011, p. 1230 ss. See also B. Luppi and F. Parisi, *Forgiving Overconfidence in Tort Law*, U.C. Berkeley: Berkeley Program in Law and Economics, 2009, p. 4. Another example of the optimism bias is offered by the findings of the survey in which respondents «see themselves as better and more competent drivers than average».

term interests»<sup>35</sup>.

This bounded will-power is linked to a category called “procrastination”, that can have significant adverse effects<sup>36</sup>. According to standard economic theory, people will consider both the short term and the long term when making decisions.

Hyperbolic discounting is an example of bounded willpower: people often do not appreciate the costs of discounting. They are willing to accept a much lower but immediate reward, though in the final analysis they have to pay a large discount over what they would receive if they were willing to wait<sup>37</sup>.

Finally, people’s self-interest is bounded, traditional economic assumptions consider that people are self-interested, *i.e.* that they are oriented to seek only their welfare, in terms of health, prosperity, riches and so on. However, according to bounded theory, people may also «want to act fairly and they may be willing to punish people who treat them unfairly and, equally important, they want to be seen to act fairly, especially but not only among non-strangers»<sup>38</sup>. In this way, even with regard of self-interest bounds, the context and the social norms – seeing someone making something, a bad or good action – are relevant aspects of human behaviour.

Concluding this part, it can possible to argue that people, and in particular, their choices depend on various elements, such as: context, social norms, emotions and so on<sup>39</sup>.

### 3.1 Cycle of regulation and Regulatory Impact Assessment (RIA) role

Cognitive sciences have shown that stakeholders’ reactions to regulations are not always rational, but rather stakeholder behaviour is unforeseeable and it risks compromising legislator’s objectives and especially reducing regulatory quality<sup>40</sup>.

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35 C. Jolls, C. R. Sunstein, R. H. Thaler, *A Behavioral Approach to Law and Economics*, cit. p. 1479.

36 C. R. Sunstein, *Empirically Informed Regulation*, «Public Law & Legal Theory Working Paper Series», Paper No. 13, 2003, Harvard Law School, p. 1350 ss.

37 R. A. Posner, *Rational Choice, Behavioral Economics, and the Law*, «Stanford Law Review», Vol. 50, 1998, pp. 1551-1575.

38 C. R. Sunstein, *Behavioral law and economics: a progress report*, «American Law and Economics Review», 1999, p. 125 ss.

39 C. R. Sunstein and R. H. Thaler, *Libertarian Paternalism Is Not An Oxymoron*. «University of Chicago Law Review», 70, 2003, p. 1159 ss.

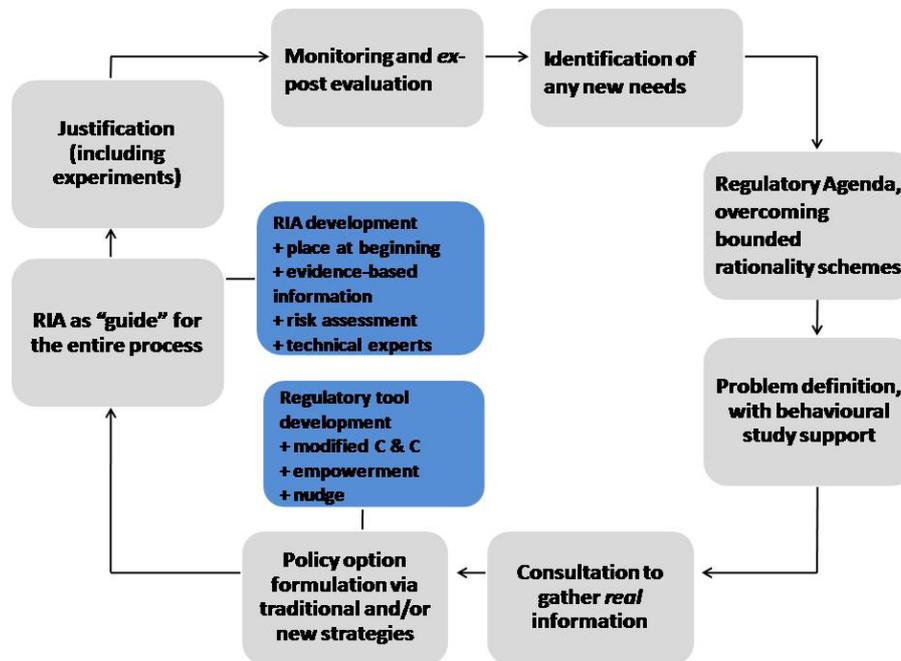
40 N. Rangone, *Errori cognitivi e scelte di regolazione*, in «Analisi Giuridica dell’Economia», 1, 2012, pp. 7-18.

Behaviour economics findings – in which an important combination of information about human limitations is present – should be managed and implemented by legislators as effectively as possible<sup>41</sup>.

According to some authors, the fundamental question is, in general, how the study of the cognitive science can enhance the quality of regulations and, in particular, «how to turn the plentiful empirical findings about human behaviour into an operational regulatory tool»<sup>42</sup>.

To understand how cognitive findings can be used by legislators it is essential to analyse the cycle of regulation steps<sup>43</sup>.

Figure 1: Cycle of regulation



41 O. Amir and O. Lobel, *Liberalism and Lifestyle: Informing Regulatory Governance with Behavioural Research*, in A. Burgess et al., *Symposium on Nudge*, *European Journal of Risk Regulation*, Vol. 3, No. 1, January 2012, p. 17 ss.

42 N. Rangone, *Il contributo delle scienze cognitive alla qualità delle regole*, cit., pp. 151-166 ss.

43 F. Di Porto and N. Rangone, *Behavioural Sciences in Practice: Lessons for EU Policymakers*, in A. Alemanno and A-L Sibony (eds), *Nudging and the Law. What can EU learn from Behavioural Sciences?*, Oxford, Hart Publ., 2014, p. 3 ss.

In figure 1, it is possible to observe the steps of the regulatory cycle as a whole, in this case the objective is to highlight how the cognitive sciences' findings should be treated in each phase of the decision making-process: from the beginning in which the legislature elaborates the first draft of the policy to the end where it is necessary to assess the effects of the regulatory option which has been chosen. Before describing all of the steps, note that the behavioural approach, as outlined in this scheme, requires a modification in the traditional regulatory process and almost certainly this approach will need a new government staff and additional time to evaluate the added behaviour elements.

First of all, (a) the definition of the regulatory agenda: this is a list of policies, realized by a legislator, that will be translated into regulations. Already in this step, there is a risk that the legislator establishes his/her priorities based on bounded rationality, cognitive errors and little time to decide<sup>44</sup>. (b) The problem definition section should include behavioural economics literature to both avoid regulation failures and to foresee unexpected behaviour(s) by stakeholders<sup>45</sup>. (c) The consultation tool can provide *real* information about 'unresponsive' behaviour. Consultation seems to be an ideal instrument to ascertain both irrational reactions and the cognitive limitations of end-users and can be integrated as effective perceptions within policy process<sup>46</sup>. In particular, this tool should be formulated in a way to examine in depth the mechanisms that can influence stakeholders' choices, overcoming biases and presumptions. For this reason, consultation must be prepared by technical experts in the cognitive sciences. (d) Traditional and new regulatory tools can use cognitive findings in different ways. For instance, traditional regulatory tools, such as Command and Control (C&C) in which regulators are well-aware of the behavioural limitations and compelled to behave in a certain way. Disclosure (with information production) is considered one of the traditional regulatory tools to be used to intervene in case of market failures, in particular reducing asymmetric information of end-users<sup>47</sup>. Instead, "new" tools for translating the results of behaviour economics to policy options are operational empowerment and nudge (more on this below). Briefly,

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44 M. De Benedetto, M. Martelli, N. Rangone, *La qualità delle regole*, Bologna, Il Mulino, 2011, p. 115 ss. See B. D. Jones, *Bounded Rationality*, «Annu. Rev. Polit. Sci.», 1999, p. 304. «If individuals have limited attention spans, so must organizations. The notion of policy agendas recognizes the "bottleneck" that exists in the agenda that any policy-making body addresses».

45 F. Di Porto and N. Rangone, *Cognitive-based regulation: new challenges for regulation*, cit., p. 4

46 *Ibidem*, p. 4.

47 On the topic of market failures, see D. F. Spulber, *Regulation and Markets*, Cambridge, MA: MIT Press, 1989, p. 37. See also G. Majone, *Regulating Europe*, Londra, Routledge, 1996. See also G. Majone and A. La Spina, *Lo stato regolatore*, Bologna, Il Mulino, 2000.

in the first case, regulators use empowerment tools to «prevent or help individuals avoid cognitive errors and more generally improve their ability to take appropriate decisions»<sup>48</sup>; in the second case, regulators change the context within which choices are made – without informing those choosing – to influence (or nudge) behavioral change<sup>49</sup>. (e) In the phase of impact analysis of regulatory options, the use of RIA should be driven by the proportionality principle: not all initiatives need impact assessment analysis, but this tool should be applied only for policies with high impact. The fundamental objective of RIA is to support the enacting of regulation that – respecting efficacy and efficiency criteria – change the human behaviour in a positive way, thus responding to the stakeholders needs<sup>50</sup>.

The classical notion of RIA is as an instrument to inform decision makers, not surprisingly it can be utilised to create an informed regulatory process by analysing cognitive limitations of end-users. In fact, according to some authors, «one way for regulators to take the findings of behavioural research seriously would be to introduce behavioural test into its RIA»<sup>51</sup>. Legislators, through RIA, can gather information on citizens' behaviour, formulating policy option alternatives, emphasizing the non-economic incentives for *real* people, and the doing nothing option «avoiding any over-estimation of the social costs of unexpected behaviour, and any under-estimation of the social costs of, for instance, a limitation of individual liberty [as we shall see RIA guides freedom]»<sup>52</sup>.

However, the adoption of RIA in conjunction with behavioural research raises some questions.

48 F. Di Porto and N. Rangone, *Cognitive-based regulation: new challenges for regulation*, cit., p. 12.

49 Australian Government, *Influencing Consumer Behaviour: Improving Regulatory Design*, 2012, p. 34 ss.

50 G. Coco, M. Martelli, F. Sarpi, *Strumenti per il miglioramento della regolamentazione e la semplificazione. L'Analisi di Impatto della Regolamentazione nell'esperienza applicativa in Italia*, p. 4. Literature on topics such as RIA is quite abundant, see A. Renda, *The Development of RIA in the European Union: an Overview*, Centre for European Policy Studies, Brussels, 2010. See C. Kirkpatrick and D. Parker, *Editorial: Regulatory Impact Assessment-An Overview*, «Public Money & Management», Chartered Institute of Public Finance and Accountancy, vol. 24(5), 2004, pp. 267-270. N. Lee, *Regulatory Impact Assessment: Developing Its Potential for Use in Developing Countries*, Centre on Regulation and Competition, Working Paper Series, No. 3, 2002, p. 3. C. M. Radaelli and A. C. M. Meuwese, *Impact Assessment Indicators Measuring. The quality of Impact Assessment*, FP6 project *Evaluating Impact Assessments (EVIA)*, 2009, pp. 2 ss. See C. M. Radaelli and A. C. M. Meuwese, *Better Regulation in the European Union. The political economy of impact assessment*, in K. Jacob (ed.), *Evaluating Integrated Impact Assessments (EVIA) Handbook*, Springer, 2009, pp. 2-4. C. M. Radaelli, *Regulating Rule-Making via Impact Assessment*, «Governance: An International Journal of Policy, Administration, and Institutions», Vol. 23, No. 1, January 2010, pp. 89-108.

51 A. Alemanno, *Nudging Europe. Why the European Commission should include behavioural insights in the design of regulatory proposals*, *European Voice*, 16 May 2012, p. 3.

52 F. Di Porto and N. Rangone, *Behavioural Sciences in Practice: Lessons for EU Policymakers*, cit., p. 3.

RIA should be placed in the initial phase of the policy process, followed by further analysis to permit the adjustment of inappropriate norms that have a negative effect, because they do not include a proper analysis of behaviour limitations<sup>53</sup>. Then, this tool should develop in terms of information gathering and, therefore, it should incorporate risk analysis to consider heuristics and biases as risks which are to be used to calculate probabilities<sup>54</sup>. Finally, RIA requires the support of cognitive science experts is necessary<sup>55</sup>. So far this development of RIA, and in particular of impact assessment, has not received any real implementation in to regulatory process. (f) The justification phase can be enriched by experiment results. The instruments selected for experiments, the choice of the subjects, the number of “treatments” to conduct or the use of randomized control trials (RCT), the results of the experiments themselves - all this information should be present in the justification steps and published in a non-technical summary by legislators<sup>56</sup>. (g) The monitoring and ex-post evaluation analysis phase permits one to assess if on the one hand the behavioural approach was really justified and, on the other hand, if it has produced positive and/or negative effects<sup>57</sup>. Then, after the evaluation phase, if the stakeholders behaviour has been changed in the right direction or not; it is probable that the needs or problems have changed over time and the legislators should formulate new policy drafts.

### 3.2 The U.S. and first application of the “behavioural” approach

In recent years, the U.S. has expressed a strong interest in a set of regulation tools that can take in to account some behavioural limitations, especially adopting a clear framing of information to favour end-users compliance. As stated in the Office of Management and Budget (OMB) Reports, the agencies are encouraged (not forced) to implement “behaviorally informed approaches”, including the use of regulatory tools such as: default rules, disclosure, RIA, and in general disseminating

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53 European Commission, *Applying Behavioural Sciences to EU Policy-Making*, 2013, p. 10. The European Commission suggests «placing behavioural insights at the beginning of the impact assessment process, in the problem definition section. In this way, individual behaviour can be one of the drivers of a policy problem that a new initiative tries to tackle».

54 F. Di Porto and N. Rangone, *Cognitive-based regulation: new challenges for regulation*, cit., pp. 4-6. See R. Baldwin, M. Cave, M. Lodge, *Understanding Regulation. Theory, Strategy, and Practice*, New York, Oxford University Press, 2012, p. 90 ss. «Risk perception studies are interested in seeking to understand better the individual biases that explain responses to risk».

55 F. M. Calvosa, *Interazione professionale e competenze multidisciplinari per una better regulation*, Roma, Forum P.A., 9 maggio 2011. «Better regulation requires high competences in the following sciences: sociology, economy, law, public communication and statistics».

56 F. Di Porto and N. Rangone, *Behavioural Sciences in Practice: Lessons for EU Policymakers*, cit. p. 6.

57 Ibidem, p. 7.

information in a way simple<sup>58</sup>.

In this way, it seems possible to argue that initially American agencies tend to adopt regulation as “empirically informed”, rather than to have a regulatory process based on a really behavioural approach.

The U.S. government, using Memorandum and Executive Order – especially EO No. 12866<sup>59</sup> and EO No. 13563<sup>60</sup> - has established the principles of good regulation. First of all, in these documents, agencies are asked to seek regulation alternatives, such as a disclosure tool, rather than implementing imperative rules like mandates or bans.

Briefly, disclosure consists in a public communication from agencies or decision makers to organize information to favour a better understanding and proper compliance by end-users. This tool is inspired by the following principles: clear, salient, accessible, simple, specific, accurate and in plain language; in this way, disclosure is intrinsically linked to the “formal quality” concept<sup>61</sup>.

According to scholars, disclosure requirements should be «thought up with *homo sapiens* in mind, not *homo economics*»<sup>62</sup>. The reasons are simple to comprehend: people do not have infinite resources, in fact they cannot have the same attention or technical competence when reading all information that comes in front of their eyes and therefore they have need to be helped<sup>63</sup>.

For example, the Affordable Care Act enacted on March 23, 2010, requires the establishment of an internet website and this requires that submitted information must be: «clear, salient, minimize the use of technical language»<sup>64</sup>.

Secondly, the federal government, and in particular the Obama administration, has encouraged the implementation of the Smart disclosure tool: «the timely release of complex information and data in standardized, machine readable formats in ways that enable consumers to make informed

58 OMB, Report to Congress on the Benefits and Costs of Federal Regulations and Unfunded Mandates on State, Local, and Tribal Entities, 2014, p. 51.

59 OIRA-OMB, Executive Order 12866, Regulatory Planning and Review, 1993.

60 OIRA-OMB, Executive Order 13563, Improving Regulations and Regulatory Review, 2011.

61 C. R. Sunstein, *Empirically Informed Regulation*, cit., p. 1352.

62 Ibidem, p. 1352.

63 OIRA-OMB, Memorandum Disclosure and Simplification as Regulatory Tools, 18 June 2010, argued that agencies should consider that «people have limited time, attention and resources for seeking out new information, and it is important to ensure that relevant information is salient and easy to find and to understand».

64 See Web Portal Requirements <http://www.cms.gov/CCIIO/Resources/Files/webportal.html>.

decisions»<sup>65</sup>. Smart disclosure is governed by various aspects as well as those mentioned above – accessibility, machine readability, standardization, timeliness, market adaptation and innovation, interoperability, personally identifiable information and protecting privacy – its fundamental objective to help consumers make more informed choices<sup>66</sup>.

In this way, regulators can use smart disclosure as a vehicle to empower consumers to make choices in the marketplace with the greater benefits for themselves. For example, the use of emoticon on their energy-bills, to indicate that the consumption is higher or lower than a given optimal level, can stimulate the reducing the power consumption.

Otherwise, take the public health example of smoking, the Family Smoking Prevention and Tobacco Control Act requires a particular form of disclosure, including text and a strong image to influence consumer behaviour<sup>67</sup>.

Figure 2: Disclosure



In this case, the use of experiments seem necessary to verify if this type of disclosure – a mix of

65 OIRA-OMB, Memorandum Informing Consumers through Smart Disclosure, 8 September 2011, p. 2.

66 National Science and Technology Council, Smart disclosure and consumer decision making report of the task force on smart disclosure, 2013, p. 7 ss.

67 Smoking Prevention Act § 201, 15 USC § 1333(a). In particular, this requirement is judged as contrary to the First Amendment. In the Case of *R. J. Reynolds Tobacco Co. v. U.S. Food and Drug Administration*, the majority of federal appeals court argued that the requirements were a violation of the right to free speech. Smoking, in literature, is the most common example used to explain disclosure's potential.

text and warning label - can change the behaviour of end-users<sup>68</sup>.

Thirdly, the RIA tool is used for regulations with an impact over \$ 100 million, according to the proportionality principles. The RIA is considered as an open process through which agencies should assess (ex-ante and ex-post) an initiative and, if necessary, correct the errors. In order to enact empirically informed regulation, the Executive Order requires the use of: consultation to involve stakeholders to write comment (via Government), impact assessment to formulate regulatory options (even if the RIA-checklist does not have any specific behavioural issues<sup>69</sup>), and it focuses especially on “retrospective analysis” of existing relevant rules to evaluate negative and positive effects. For instance, the Departments of Labor, Transportation and others have adopted plans to review their legislation. Retrospective analyses, in order to show if regulation is optimal or not, might include some experiments, such as the use of randomized controlled trials<sup>70</sup>.

As noted above and highlighted in doctrine, even if agencies have adopted some regulatory tools to overcome the behaviour limitations, they, however «lack the framework for incorporating these insights into regulatory analyses»<sup>71</sup>.

### 3.3 New empirically informed regulation tools: the nudge regulation

The regulators in order to achieve the goal of regulatory quality can utilise some better regulation tools, such as impact assessment and consultations, both to gather *real* feedback from end-users, and to elaborate this information to formulate a proper set of regulatory options. However, regulators even if they do not use stable consultation or do not comply with the findings of RIA, should take into account some limitations of human behaviour.

According to Richard Thaler and Cass Sunstein, regulators can construct sets of options (a context) from which people can make the best choices for themselves<sup>72</sup>. Acting as choice architects, policy makers organize the context and environment in which individuals make decision<sup>73</sup>. In

68 European Commission, *Applying Behavioural Sciences to EU Policy-Making*, 2013, p. 5 ss.

69 [http://www.whitehouse.gov/sites/default/files/omb/inforeg/regpol/RIA\\_Checklist.pdf](http://www.whitehouse.gov/sites/default/files/omb/inforeg/regpol/RIA_Checklist.pdf)

70 C. R. Sunstein, *Empirically Informed Regulation*, cit., p. 1391.

71 M. Vanderbergh, A. Carrico, L. Schultz, *Regulation in the Behavioural Era*, *Minnesota Law Review*, 2011, p. 721.

72 R. H. Thaler and C. R. Sunstein, *Nudge. Improving decisions about health, wealth and happiness*, Yale, 2008; trad. it. *La spinta gentile, La nuova strategia per migliorare le nostre decisioni su denaro, salute, felicità*, Milano, Feltrinelli, 2008, p. 18 ss.

73 A. Alemanno and A. Spina, *Nudging Legally. On the Checks and Balances of Behavioural Regulation*,

particular, these architects not only establish a proper context, but, rather, through the *nudge*, they seek actively to encourage the stakeholders to enhance their lives.

The *nudge*, according to its theorists, is «any aspect of the choice architecture that alters people's behaviour in a predictable way, without forbidding any options or significantly changing their economic incentives»<sup>74</sup>.

The idea of nudge, inspired by paternalist liberalism, is rooted in an understanding of biases that people are subject to in various situations where they have choices to make<sup>75</sup>.

The nudge can be described as an intervention whose aim is to change human behaviour, allowing end-users “apparently” to make choices in an independent way. To illustrate nudge theory and its different inclinations, it is possible to refer to two models: the “assistant” nudge model and the “pure” nudge model. The “assistant” nudge in which choice architecture must change the context to reach its objectives, requiring an intervention of firms or other subjects<sup>76</sup>.

A part of this strategy which is linked to alcohol is illustrative: the Britain Government, through its Behavioural Insight Team (BIT) - an unit within of the Cabinet Office that provides support to the application of behavioural science to policy design - has established a *Public Health Responsibility Deal*, according to which some major supermarkets do not display alcohol at the front of their stores<sup>77</sup>.

This initiative reflects the implementation of behavioural research, which shows that the way the environment is constructed can shape a person's choices within it. Thus, «it is hoped that by changing the choice architecture in the supermarket, that is changing the positioning of alcohol

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cit., p. 14.

74 R. H. Thaler and C. R. Sunstein, *Nudge. Improving decisions about health, wealth and happiness*, cit., p. 6.

75 E. Selinger and K. P. Whyte, *Competence and Trust in Choice Architecture*, Springer, 2010, pp. 469-481.

76 Australian Government, *Influencing Consumer Behaviour: Improving Regulatory Design*, p. 34 ss.

77 M. Quigley, *Nudging for health: on public policy and designing choice architecture*, *Medical Law Review*, 2013, pp. 589-594. See Cabinet-Office, Behavioural Insight Team, *Better Choices: Better Deals, Consumer Powering Growth*, 2011, p. 44 ss. «The Government has established a Public Health Responsibility Deal which is a new mechanism to enable a broad range of organisation (industry, the Retail sector, the voluntary sector, NGO's, local government and other organisations) to come together to help us all lead healthier lives». See also P. Basham, *Are Nudging and Shoving Good for Public Health?*, A Democracy Institute Report, 2010, p. 4. «The work of the unit will be focused initially on public health issues such as obesity and alcohol consumption».

products, there will be a reduction in the amount being purchased»<sup>78</sup>.

The “pure” nudge model, instead, refers to interventions which alter decision contexts without placing any additional requirements on entities; an example is when family doctors try persuading people to drink less alcohol.

In general, some nudge strategies can be described as follows: (i) default rules, defined as “canonical nudge”<sup>79</sup>, are based on a presumption of consent unless the interested parties want to choose in another sense. This strategy uses inertia to nudge people to choose something which others consider better for them<sup>80</sup>.

Recently, various governments and institutions have recognised the effects of default rules: for instance, the European commission has recognized the power of default options when it enacted the Consumer Rights Directive<sup>81</sup>. Indeed, the European Commission proposed limiting the use of pre-checked boxes in consumer contracts (the kind that made consumers purchase travel insurance even if they do not want it) in order to save consumers money<sup>82</sup>.

Evoking the American experience, the Office of Information and Regulatory Affairs (OIRA), in the Memorandum on Disclosure and Simplification as Regulatory Tools of 2010, already mentioned above, suggests regulators adopt default rules or active choosing<sup>83</sup>. Default rule uses can produce a

78 M. Quigley, *Nudging for health: on public policy and designing choice architecture*, cit., p. 594.

79 C. R. Sunstein, *Deciding by default*, «University of Pennsylvania Law Review», Vol. 162, No. 1, 2013, p. 5 ss.

80 F. Di Porto and N. Rangone, *Behavioural Sciences in Practice: Lessons for EU Policymakers*, cit. p. 8 ss.

81 European Commission, *Applying Behavioural Sciences to EU Policy-Making*, cit., p. 5.

82 See article 22 of Directive 2011/83/EU on consumer rights: «Before the consumer is bound by the contract or offer, the trader shall seek the express consent of the consumer to any extra payment in addition to the remuneration agreed upon for the trader’s main contractual obligation. If the trader has not obtained the consumer’s express consent but has inferred it by using default options which the consumer is required to reject in order to avoid the additional payment, the consumer shall be entitled to reimbursement of this payment».

83 OIRA-OMB, *Memorandum on Disclosure and Simplification as Regulatory Tools*, cit., p. 9. «Default rules play a large role in many domains. Both private and public institutions make numerous choices between opt-in and opt-out design. Considerable evidence suggests that the choice of the default rule can have a significant effect on behavior and outcomes, even if it is simple and essentially costless to opt in or opt out. A typical finding is that under an opt-in system, fewer people are likely to participate than in an opt-out system. One reason is that inertia can be a powerful force; people may procrastinate or decline to make the effort to rethink the default option. Another reason is that the default rule might be taken to carry an implied endorsement by those who have chosen it; people may not depart from the default rule on the ground that it might have been selected because it is helpful or appropriate. Whatever the reason, it is clear that in some contexts, the chosen default rule can have significant effects, perhaps more significant than alternative possibilities, including disclosure of relevant information and even monetary incentives [...]».

relevant impact of end-users; for instance, some researchers have demonstrated the relevant effects of default rules on retirement saving, concluding that participation is higher among plans with automatic enrollment<sup>84</sup>.

For this reason, regulators must be very careful when using default rules, basing their use on a clearly identified cost and benefits of the stakeholders<sup>85</sup>. In this process, RIA, and in particular cost-benefit analysis, can help agencies assess the future impact of default rules<sup>86</sup>.

(ii) Smart information nudging is based on the fact that, as Cialdini has argued, «people are more likely to comply with a social norm if they know that most other people comply»<sup>87</sup>. For instance, the introduction of bike hire schemes in cities hopes to enhance public health based on idea that seeing more people cycling would create a new social norm and visual prompt, encouraging more people to want to cycle<sup>88</sup>. Otherwise this smart information nudging has been used to reduce energy consumption by using personalized message which indicate to home owners that come of their neighbors have adopted measures to become more energy efficient<sup>89</sup>. This encourages them to imitate the behaviours of these peers<sup>90</sup>. (iii) A form of nudge tries to influence end-users' choices by utilizing their emotional and instinctive responses<sup>91</sup>. For instance, the “Dancing Traffic Light” is a project, realized by Smart, to reinforce road safety. The idea is that the little red man, visualized in to traffic light, might start to move, attracting pedestrians on the street and thus favouring their respecting the stop imposed by the red traffic light. The experiments, conducted during a day in Portugal, have shown a reduction of people passing against the red<sup>92</sup>.

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84 C. R. Sunstein, Switching the default rules, «University of Chicago Law Review», No. 114, 2001, p. 8 ss.

85 N. Rangone, Il contributo delle scienze cognitive alla qualità delle regole, cit., p. 164.

86 N. Rangone, Il contributo delle scienze cognitive alla qualità delle regole, cit., p. 165. See C. R. Sunstein, Impersonal Default Rules vs. Active Choices vs. Personalized Default Rules: A Triptych, Regulatory Policy Program Working Paper RPP-2012-17, Cambridge, MA: Mossavar-Rahmani Center for Business and Government, Harvard University, 2012, p. 6. «My basic conclusion is that the choice among impersonal default rules, active choosing, and personalized default rules cannot be made in the abstract. To know which is best, choice architects need to investigate the costs of decisions and the costs of errors».

87 R. Thaler, Watching Behavior Writing the Rules, The New York Times, 7 July 2012, p. 3. See R. B. Cialdini et al., Managing social norms for persuasive impact, *Social Influence*, 1 (1), 2006. pp. 3-4 «[...] now seems established that social norms can both spur and guide human behaviour».

88 M. Quigley, Nudging for health: on public policy and designing choice architecture, cit., p. 593.

89 F. Di Porto and N. Rangone, Cognitive-based regulation: new challenges for regulation, cit., p. 21.

90 F. Di Porto and N. Rangone, Behavioural Sciences in Practice: Lessons for EU Policymakers, cit., p. 10

91 Ibidem, p. 11.

92 See the Project <http://int.smart.com/en/en/index/smart-campaigns/whatareyoufor/for-a-safer-city.html>.

Figure 3: Nudging



Generally, nudge regulation presents negative and positive points: among the strong points, nudge regulation influences human behaviour without reducing the freedom of end-users, increasing efficacy and it has low costs<sup>93</sup>.

Conversely, some negative points can be described as follows: (a) nudging is not the same as behavioural economics; (b) proponents of nudging are overconfident<sup>94</sup>; (c) the definition of nudge is not clear<sup>95</sup>; (d) the adoption of nudge lacks transparency; (e) the ethical question - nudging tends to work best when users are unaware that their behaviour is influenced by choice architecture (instead, empowerment tools are based on deliberately conscious decisions)<sup>96</sup>; (f) opportunistic choices by regulators; (g) nudging can increase regulatory inflation; (h) nudging reduces the feeling that we

93 N. Rangone, *Errori cognitivi e scelte di regolazione*, cit., pp. 15-17.

94 A. Burgess, 'Nudging' Healthy Lifestyles: The UK Experiments with the Behavioural Alternative to Regulation and the Market, in A. Burgess et al., *Symposium on Nudge*, «European Journal of Risk Regulation», Vol. 3, No. 1, January 2012, p. 1 ss.

95 E. Selinger and K. P. Whyte, *Is there a right way to nudge the practice and ethics of choice architecture*, *Sociology Compass* 5/10, 2011, pp. 923-935. An example of a mistaken nudge is the Toxic Release Inventory, which discloses information to the public on how much pollution companies release into the environment. According to authors of nudging theory, only the fact of disclosure information being obligatory can contribute to reduce pollution, but, «such “environmental blacklists”, like the Toxic Release Inventory, do not nudge because they really serve to increase the costs of polluting. Such a Greenhouse Inventory would change financial incentives as opposed to working with the unconscious biases that corporate executives or other key players are subject to».

96 F. Di Porto and N. Rangone, *Behavioural Sciences in Practice: Lessons for EU Policymakers*, cit., p. 7.

must take difficult, mature decisions; (i) what kind of competence is required for a choice architect, in general the choice architect should first have competences of behavioral economics; and second an adequate grasp of how people perceive contexts where they must make choices<sup>97</sup>.

#### 4. Conclusions

First of all, this essay has retraced the development of regulatory quality in the European Union: in this ideal process, this is also measured in the light of its capacity to reduce the short circuit determined by the heuristic and behaviour limitations, which may be present in the choices made by stakeholders<sup>98</sup>.

The second part has explored the findings of the cognitive science, according to which people are not always rational, rather they are influenced by how information is presented, framed, social context, emotions, other people and so on. Starting from this analysis, it is possible to argue that we have moved from the standard economic approach, where individuals have stable and coherent preferences, to cognitive science that is based on the assumption that the masses have some limits and they do not always make good decisions for themselves<sup>99</sup>.

Following this analysis, I tried to show that in my opinion neither of the two paradigms is a complete answer, but probably that neuro science, cognitive science, psychology can furnish a set of information to understand human behavior<sup>100</sup>.

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97 E. Selinger and K. P. Whyte, Nudging Cannot Solve Complex Policy Problems, «European Journal of Risk Regulation», Vol. 3, No. 1, 2012. A. Burgess, Nudging Healthy Lifestyles – Informing Regulatory Governance with Behavioural Research, «European Journal of Risk Regulation», Vol. 3, No. 1, 2012. N. Rangone, Dalle scienze cognitive, alcune indicazioni per i regolatori, in «Studi parlamentari e di politica costituzionale», n. 175, 2012, pp. 102-105. E. Selinger and K. P. Whyte, Competence and Trust in Choice Architecture, cit., p. 469. The BIT is composed of a team with backgrounds in academia *i.e.* behavioural sciences, experimental methodology, policy making and marketing. See BIT Website <http://www.behaviouralinsights.co.uk/about-us>.

98 N. Rangone, Il contributo delle scienze cognitive alla qualità delle regole, cit., p. 157.

99 Richard Posner explains in his review of Jolls-Sunstein-Thaler's bounded rationality theory that it risks becoming a set of statements without a proper scientific character; in particular he uses Popper's falsifiability criterion to affirm that bounded rationality theory has no scientific content. See R. A. Posner, Rational Choice, Behavioural Economics, and the Law, «Stanford Law Review», Vol. 50, 1990, pp. 1551-1575. See R. B. Korobkin and T. S. Ulen, Law and Behavioral Science: Removing the Rationality Assumption from Law and Economics, «California Law Review», Vol. 88, Issue 4, 2000, p. 1060 ss. R. Korobkin, What comes after victory for behavioral law and economics, «University of Illinois Law Review», 2011, p. 1663.

100 See Australian Government, Influencing Consumer Behaviour: Improving Regulatory Design, cit., p. 34. «Both rational choice and behaviour economics provide a useful approach for understanding and predicting

In fact, if legislators do not have this relevant information about all stakeholders (citizens, consumers etc.), or are not able to use it, there is a risk of compromising policy objectives and thus reduce the quality of regulation.

One of the fundamental questions, discussed in much literature, is how to translate behavioural information to regulatory process. The third part has attempted to describe how these new behaviourally-informed regulatory processes can be integrated into the regulatory state. In this paper's analysis of the cycle of regulation, the focus has been on the regulatory toolkit: consultation to know in advance unexpected reactions and behaviour limitations, and RIA which can be a support to formulating alternative policy options, with regard to non-economic incentives adopted for *real* people. In this way, even if RIA is based on a cost-benefit analysis which considers stakeholders as rational self-interested maximizers<sup>101</sup>; it can be enriched by risk analysis that considers heuristics and biases as risks which are to be used to calculate probabilities<sup>102</sup>.

Moreover, going from the logic of intervention step to the justification and post-evaluation phases, one might use trial random customizer experiments or experiments with neuron indicators both to understand human behavior better and to assess the effects of regulations<sup>103</sup>.

A first implementation of behavioural findings in the regulatory process has happened in the U.S., this is no coincidence because the American continent has a long tradition with better regulation tools. The OMB has encouraged the adoption of the behaviour approach, even if memorandum and executive order do not oblige agencies to follow this prompt. American agencies are oriented towards "empirically informed" regulation, in which they take into account some human limitations. For instance, disclosure as a regulatory tool ensures that information is salient and easy to find and to understand. Smart disclosure is a mix of strategies in which consumers, through new technologies, are helped in making choices in the marketplace. Then, RIA is used for "retrospective analysis", especially for the review of existing regulation. In this way, we are still far from a real integration of behaviour elements, incorporating the findings of experiments.

However, when the proportionality principle dictates that the regulatory tools, like RIA, will

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consumer behaviour. These approaches view choices as different process and, as such, offer a different perspective on why a given choice was ultimately made».

101 C. R. Sunstein, *Cognition and Cost-Benefit Analysis*, University of Chicago Law School, John M. Olin Law & Economics Working Paper No. 85, 1999, p. 9. The cost-benefit analysis is defined as a democratic means: «it can be used on economic grounds and it can as well as display some heuristics effects and thus can also serve to produce the relevant informations on cognitive biases».

102 N. Rangone, *Il contributo delle scienze cognitive alla qualità delle regole*, cit., p. 160.

103 See note 5.

not be used, legislators or decision-makers should incorporate the findings of behavioral economics into policy design and one possible way is nudge regulation.

Finally, this essay has described the nudging theory, based on the choice architect which through the use of nudge seeks to change the context: it is important because the context itself can influence the way we think and decisions we make.

In literature some problems linked to nudge regulation have been raised and I focus on two questions: first, it is not clear what a nudge is. Let us remember the example mentioned in the introduction, if repainting the roadway to avoid accidents is considered a nudge for nudging authors; in fact, the white stripes are simply the product of a decision the traditional authorities and these stripes do not actually eliminate the problem<sup>104</sup>.

Second, nudging can have some effects on citizens freedom, indeed citizens should trust choice architects that aim to modify their decision-making context. In this way, RIA can be used to reconstruct a proper cognitive process and reduce the negative risks of nudge regulation, mainly those attributed to the use of default rules or active choosing<sup>105</sup>.

RIA can assume a “guide” role, but it is necessary that it be developed as follows: to obtain information about behaviour limitations of context, integrate risk analysis, evaluation ex-post with experiment results and so on.

Perhaps, the main result of this debate is that regulators, scholars and public opinion have returned to focused on *real* people, with the attention that regulation tools do not always and automatically produce successful regulations «much as when Aladdin summoned a genie by rubbing a magic lamp»<sup>106</sup>.

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104 E. Selinger and K. P. Whyte, *Is there a right way to nudge the practice and ethics of choice architecture*, cit., p. 928.

105 N. Rangone, *Il contributo delle scienze cognitive alla qualità delle regole*, cit., p. 165.

106 W. Berns, *Law and Behavioural science*, «Law and Contemporary Problems», Vol. 28, No. 1, 1963, pp. 185-212.

