

Nicoletta Rangone

(forthcoming in *European Journal of Risk Regulation*)

Making Law Effective: Behavioural Insights Into Compliance

Dogmatic jurists have been traditionally indifferent to the “law in action”, considering that the task of legislators and regulators is limited to draft the “law in the books”¹. Related to this approach is an indifference for the law effectiveness² and for any empirical investigation into drivers that induce people to comply (such as deterrence, emotions or social norms) or - in general - that lead laws to attain their desired ends. Such approach has been indirectly supported by the neoclassical economics and its idea that people can be treated as selfish, rational and independent agents³. According to this paradigm, compliance is related to rules supported by adequate sanctions and controls, information disclosure offers sufficient guarantees to consumers or private investors, economic incentives are able to influence individuals and firms.

The reality is simpler and more complex at the same time. Compliance decisions are not necessarily the result of a complex cost-benefit and risk analysis. On the contrary, many determining factors which go beyond rationality lead people to action or inaction (e.g. emotions and social norms), and any decision to comply is not taken once and for all (it should be influenced, for instance, by previous experience and by public authorities’

¹ “Effective administration is perhaps the great problem of the future. (...) It is the work of lawyers to make the law in action conform to the law in the books (...) by making the law in the books such that the law in action can conform to it, and providing a speedy, cheap and efficient legal mode of applying it” (Roscoe Pound, ‘Law in books and law in action’ [1910] vol. 44 *American Law Review* 35, 36).

² “Le droit dogmatique considère qu’il y a règle de droit véritable dès qu’un texte émanant de l’organe constitutionnellement compétent a été régulièrement promulgué. Peu importe que ce texte ne soit pas effectivement appliqué. (...) L’effectivité n’appartient pas à la définition de la règle de droit” (Jean Carbonnier, ‘Effectivité et ineffectivité de la règle de droit’ [1957] vol. 9 *L’année sociologique* 3).

³ “Traditional regulatory theory simplified the [regulatory task] by assuming that consumers made rational choices. The regulator then could proceed, in brief, by positing a rational consumer in a specified market environment and comparing the choices she would make if choice were costless with the choices she would make if choice were costly in various way. If these (theoretically derived) choices differed widely (and the models had some empirical validation), there was reason to intervene in actual markets” (Alan Schwartz, ‘Regulating for rationality’, 2015 vol. 67, *Stanford Law Review*, 1384).

attitudes toward regulatees). Moreover, information is neither easily processed nor decisive in supporting conscious behaviours, and individuals and firms are not necessarily driven by economic incentives to act in accordance with rules.

While the findings of psychology, sociology, behavioural economics and behavioural ethics are well established and accepted in many areas of the social sciences, they have only marginally influenced the juridical approach to regulation and enforcement strategies of many rule-makers and law-makers around the world. Indeed, despite some countries having created behavioral insight teams in order to support regulators with experiments and expertise, none has yet implemented a comprehensive approach which, using insights from all of the above-mentioned disciplines, has led decision-makers to assessing all compliance drivers in order to draft more effective rules and enforcement strategies.

The intention of the paper is to support public decision-makers in approaching these disciplines towards a better understanding of human behaviours. It argues that for rules to be effective there needs to be a clear understanding of all drivers leading people to comply or, in a broad term, to react to rules by one of three responses: comply with the rules, break the rules, or comply creatively. Such drivers are not only deterrents, information or economic incentives, but also all other possible motivations that go beyond the rational calculus, such as internal motivations, a sense of procedural fairness, cooperation, social norms, or cognitive biases and heuristics. From this perspective, the paper addresses two points: it argues that such drivers help to identify not only the conditions for successful use of rules but also the relative potential of rules as opposed to other control devices in different contexts.

The paper is organised as follows:

Section 1 suggests a comprehensive approach to effectiveness, composed of two directions: effectiveness as perfect compliance with the terms of rules, and effectiveness as a result of rules which incentivize behaviours to meet the “spirit of the law”.

Section 2 claims that the concepts related to the quality and the effectiveness of law and regulation are strictly linked, and that better regulation tools (such as legal drafting and the assessment of rules) may help public decision-makers in increasing the effectiveness of rules and enforcement strategies. In turn, the latter are indeed crucial in increasing compliance and thus the effectiveness of rules.

Section 3 investigates different approaches to compliance-seeking, which lead to different rules and enforcement strategies. Some of these approaches (from the classic deterrence approach, to the risk-based) assume the individual's rationality, while others suggest an understanding of compliance from a more complex and nuanced perspective. These studies suggest that it is worth paying attention, for instance, to psychological drivers and to individual internal motivations; to focus on the main actors of compliance and on their interaction (e.g. the single regulatee, other regulatees, and public authorities such as inspectors); and to consider the perceived legitimacy of public authorities ("procedural justice").

Section 4 proposes that one more strand of this research is to be found in the cognitive sciences (i.e. all disciplines that study human cognitive limitations and how rules should respond to departures from rational behaviour)⁴, which have contributed to the emergence of new regulatory tools (Sect. 4.2) and enforcement strategies (Sect. 4.3). These new tools are crucial in enhancing the effectiveness of law and regulations whenever a behavioural element exists (i.e. when the main objective of a rule is to change individual behaviour, or when individuals' behavioural response might hinder the effectiveness of a given rule)⁵. In these cases, the use of cognitive insights in public decision-making and in regulatory impact assessment (to perform what is suggested should be qualified as "cognitive-based impact assessment") can be considered the most advanced border of better regulation.

⁴ Departures from rational behaviour are widely analysed in behavioural economics, sociology, psychology, behavioural ethics. In addition, neuroscience, with brain imaging, eye-tracking and other methods, could provide useful insights, whereas their contribution to rule-making and law-making is still limited.

⁵ Rene Van Bavel et Al., *Applying Behavioural Sciences to EU Policy-Making*, JRC Scientific and Policy Reports (Publications Office of the European Union 2013) 6.

In Section 5, the paper concludes by suggesting that an integration of compliance approaches could offer the most promising prospects in increasing effectiveness. On one hand, deterrence is crucial in order to prevent non-compliance and to support voluntary compliance; however, in order to be effective, deterrence should be calibrated by a risk-based and responsive approach to rules and enforcement strategies. On the other hand, trust and cooperation are fundamental in order to ease voluntary compliance, and (in some circumstances) a cognitive-based approach should complement these views for the purpose of increasing effectiveness by designing environmental choices which prompt or support a given behaviour.

1. Two dimensions of effectiveness: the formal and the substantive

Effectiveness is crucial for any legal system. When rules are not effective, the problem they aim to address remains unsolved; for instance, private investors hold onto disastrous speculations, gamblers keep playing unless it can ruin their lives, workers are not protected against accidents, pollution increases, etc. Moreover, ineffective rules are not justified and they are no more than a burden on public administrations, citizens and firms.

The indifference for the “law in action” has been criticised and – in many countries – overcome by an attention to the legislation and regulation life-cycle and thus the enforcement has assumed an increased importance ⁶. However, it is still not clear what is meant by effective rules. Following the shared understanding that compliance corresponds to conformity with rules ⁷, effectiveness would coincide to perfect compliance with the terms of rules. In order to attain this type of compliance (i.e. conformity with rules), ex ante controls (such as concession systems), harsh sanctions and frequent

⁶ OECD, *Best Practice Principles for Regulatory Policy: Regulatory Enforcement and Inspections* (OECD publishing 2014) 3.

⁷ Benedict Kingsbury (*The concept of compliance as a function of competing conceptions of international law* [1998] 19 Michigan Journal of International Law 345, 346) makes “the contrary argument that the concept of compliance with the law does not have, and cannot have, any meaning except as a function of prior theories of the nature and operation of the law to which it pertains”.

inspections have traditionally been considered as the most effective enforcement strategies (classic deterrence approach) ⁸.

While this dimension of effectiveness is crucial, the mere correspondence of behaviour with legal rules may not be decisive in meeting public goals. For instance, it has been demonstrated that the compliance with a rule to disclose conflicts of interest can result in being ineffective in protecting financial investors because of the “anchoring effect” ⁹ (people can still feel a pressure to adhere to the advice disclosed as conflicted, or they paradoxically increase trust in the advice interpreting the disclosure as a sign of honesty) ¹⁰. In the same vein, the so-called four eye rule, introduced in many systems in order to curb corruption, sometimes backfires, because people working in pairs are more likely to engage in corruption than people working individually ¹¹. Another example is opportunistic reporting in tax compliance, which reduces taxes by taking advantage of systems based on self-reporting (e.g. tax reporting of excessive R&D expenses, where it allows tax deductions and tax credits) ¹²; this practice cannot be qualified as tax evasion, but it leads to interpreting rules to gain advantages that those rules were never intended to recognize (tax avoidance). A reaction to this and other similar practices leading to more stringent and particularly detailed rules

⁸ This approach to compliance is strictly linked to the neoclassical economics theory, based on the utility maximization assumption (Gary S. Becker, ‘Crime and Punishment: An Economic Approach’ [1968] vol. 76, n. 2 *Journal of Political Economy* 169; George J. Stigler, ‘The Theory of Economic Regulation’ [1971] vol. 2, n. 1 *Bell Journal of Economic and Management Science* 3), according to which people and firms act on the basis of a rational assessment of the option providing the largest net gain (Michael Allingham, *Rational Choice* (Macmillan 1983). “In the taxation context, for example, a taxpayers’ choice is between compliance and tax evasion. By complying, the taxpayer incurs a loss in the form of taxes paid, but evading tax there is the chance of a relative gain if evasion is undetected. Alternatively, there is the chance of an ever greater loss if the evasion is detected and penalized. According to the rational choice model, taxpayers calculate these risks when deciding whether or not to comply” (Kristina Murfy, ‘The Role of Trust in Nurturing Compliance: A Study of Accused Tax Avoiders’ [2004] 28 *Law and Human Behaviour* 187, 188).

⁹ Amos Tversky and Daniel Kahneman, ‘Judgment under Uncertainty: Heuristics and Biases’ [1974] vol. 185, n. 4157 *Science* 1124, 1128.

¹⁰ Moreover, the adviser in a conflict of interest might no longer feel responsible for the consequences as a perverse effect of disclosure (Sunita Sah, Daylian M. Cain and George Loewenstein, ‘Confessing one’s sins but still committing them: transparency and the failure of disclosure’, in Adam Oliver, *Behavioural Public Policy* (Cambridge 2013) 148).

¹¹ Ori Weisel and Shaul Shalvi, ‘The collaborative roots of corruption’ [2015] Vol. 112, n. 34 *PNAS* 10651.

¹² Israel Klein, *The Cost of Self-Reporting*, paper presented at the 13th Annual Conference, SIDE - ISLE (Italian Society of Law and Economics), December 15-16, 2017, Rome.

would paradoxically increase ineffectiveness by opening room for even more creative compliance ¹³.

Here the two dimensions of effectiveness take shape, the formal and the substantive. Substantive compliance relates to the ability of rules to incentivise people to attain the desired results of such rules, i.e. the public interest involved in a given rule, such as (in the previous examples) investor protection, corruption prevention or the provision of financial contributions to common needs and the functions of the public sector ¹⁴. In these examples, mere compliance with the term of a rule does not lead to effectiveness.

Substantial effectiveness is indeed something more than perfect compliance: law and regulation are effective not only when adequate incentives to comply are addressed to regulatees (formal effectiveness), but even where they support mechanisms to produce the desired results and give a concrete answer to the public interests with which they deal (substantive effectiveness). Therefore, a corruption prevention rule forbidding public servants to accept gifts whose value exceed a certain threshold is effective not only if employees abide by such a rule (they accept only gifts under the amount imposed by the code of conduct), but if such a rule helps people avoid performing corrupt actions. Moreover, such rules concerning admissible gifts do not prevent non-monetary incentives (such as invitations to give lectures in prestigious conferences) which are harder to resist because they “create an ambiguity with regard to the rationale behind giving them” ¹⁵ and could often lead people to break the impartiality duty unconsciously, i.e. without fully recognising the ethical and legal implications of their behaviour ¹⁶.

¹³ Doren McBarnet and Christopher Whelan, ‘The elusive spirit of the law: Formalism and the struggle for legal control’ [1991] vol. 54, n. 6 *Modern Law Review* 848.

¹⁴ Referring his influential study to rules emanating from government, Robert Baldwin (*Rules and Government* (Clarendon Press 1995 142) underlines that “making rules work involves more than producing rules that are conducive to compliance. If the rules are not designed properly then even perfect enforcement and compliance with the terms of the rules may not lead to the results that are desired by legislators or those regulating in the public interest (e.g. safe factories, clean rivers)”.

¹⁵ Yuval Feldman, ‘Using Behavioral Ethics to Reduce Organizational Misconduct’ [2017] Vol. 3, n. 2 *Behavioral Science and Policy* 88.

¹⁶ Yuval Feldman (*The Law of Good People: Challenging State's ability to Regulate Human Behavior*, CUP, forthcoming) argues that “the good-people rationale – the idea that ordinary people could engage in all types of wrongdoing without being aware of the full meaning of their behavior – greatly complicates the regulatory challenge of states. Because of various psychological and social mechanisms that prevent people from recognizing their wrongdoing

Therefore, effective rules must: produce properly identified and targeted outcomes; satisfy representative concerns (openness, accountability etc.), and do this at lowest feasible cost; and create confidence that such performance will be sustained.

Attaining effectiveness (in this broader view) is a complex task for decision-makers, which must investigate all compliance drivers involved, such as social norms which provide important motivation for action or inaction ¹⁷, or the perception of public authorities' fairness, apart from rational cost-benefit calculations (as will be further analysed in Sections 3 and 4).

2. Better regulation tools for effectiveness

Better regulation tools can help public decision-makers in enhancing effectiveness of law, regulation and enforcement strategies.

As a preliminary concern, it is to be underlined that the effectiveness issue specifically concerns the regulatory content of a given law and regulation, i.e. the rules which have a direct impact on end-user organisation or activities ¹⁸. Such a rule can be supported by a source of law approved at a political level, by administrative provisions adopted by public administrations through discretionary or technical powers, and self-regulation delegated by public powers ¹⁹. This is why better regulation tools are relevant for all

and encourage them to feel as if they are far more moral, unbiased, and law abiding than they actually are, individuals today are less likely to react, at least not explicitly, to classical legal signals, which they view as directed to other, "bad" people".

¹⁷ For instance, "individuals' unethicity does not depend on the simple calculations of cost-benefit analysis, but rather depends on the social norms implied by the dishonesty of others and also on the saliency of dishonesty" (Francesca Gino, Shahar Ayal and Daniel Ariely, 'Contagion and differentiation in unethical behavior: the effect of one bad apple on the barrel' [2009] vol. 20, n. 3 *Psychological Science* 393).

¹⁸ Regulations must be divided into rules and principles, where the core element of rules is the content which directly affects the end users, differently from principles (such as free competition) which must be applied by rules [Ronald Dworkin, *Taking rights seriously* (first published 1977, Harvard University Press 1997). Maria De Benedetto, Mario Martelli and Nicoletta Rangone, *La qualità delle regole* (Il Mulino 2011) 13.

¹⁹ According to a traditional assumption (based on a certain view of separation of powers) "the administration exercises discretionary powers in individual cases, while rules concerning an undetermined class of subjects or even all of them are reserved to Parliament. But this view fails to provide an account of much of today's activities of public administrations in two respects. First, there are individual decisions potentially affecting a large part of the population, such as the authorization to build and manage a nuclear plant. (...) Second, modern societies are not regulated only by legislation, but also by innumerable rules, often

decision-makers (both legislators and regulators), whenever they deal with rules ²⁰.

What is it about rules that makes them effective?

First of all, in order to be implemented, rules must be accessible and understood ²¹. To this aim, plain-language drafting, informed by the criteria of cost efficiency, clarity, precision and unambiguity, is crucial ²². Measures must also be taken to ensure that end-users really understand rules, and how such rules are interpreted and enforced by public administrations ²³. To this end, many countries rely on simplification of rules and administrative procedures and their communication to the public ²⁴, as well as guidance documents, education programs, the transparency of informal guidance, and the possibility to ask public administrations how to interpret a given rule. Moreover, while the debate on detailed rules versus discretion is open ²⁵, it has been demonstrated that effectiveness is threatened both by excessively

having a technical nature, issued by public administrations, for example, with regard to the marketing of pharmaceutical products and to the delivery of electronic communications" (Giacinto Della Cananea, *Due Process of Law Beyond the State: Requirements of Administrative Procedure* (Oxford University Press 2016) 111-112).

²⁰ The approaches and tools used to improve the quality of legislation differ from those implemented for regulation. Indeed, while drafting has traditionally been performed and improved in the domain of legislation, other good quality regulation tools (such as regulatory impact assessment, regulatory burden measurement, SME proportionality test, ex post evaluation etc.) are mainly used by regulators.

²¹ One challenge to effectiveness is obscure and ambiguous rules and regulatory inflation (Eugene Bardach and Robert A. Kagan, *Going by the Book. Unreasonableness. A Twentieth Century Fund Report* (Temple University Press 1982) 193).

²² Hellen Xanthaki, 'Quality of legislation: an achievable universal concept or a utopian pursuit?', in Marta Travares Almeida (ed.), *Quality of Legislation* (Nomos 2011) 75; Maria Mousmouti, 'Effectiveness as an Aspect of Quality of EU Legislation: is it feasible?' [2014] vol. 2, n. 3, *The Theory and Practice of Legislation*, 309.

²³ Florentin Blanc, *Inspection Reforms: Why, How and With What Results* (OECD publishing 2012), point 29. The so-called "Table of Eleven" determinants of compliance developed by The Netherlands in 2004 comprises eleven dimensions divided into two groups: the enforcement dimension group and those dealing with spontaneous compliance (composed by factors that affect voluntary compliance, i.e. in the absence of enforcement). In the latter, the level of knowledge and understanding of the rules, as well as the clarity of rules play a crucial role.

²⁴ At European level, the European Parliament, the Council and the Commission made commitments "to update and simplify legislation and to avoid overregulation and administrative burdens for citizens, administrations and businesses, including SMEs, while ensuring that the objectives of the legislation are met", and the European Commission "undertakes to present annually an overview, including an annual burden survey, of the results of the Union's efforts to simplify legislation and to avoid overregulation and reduce administrative burdens" (point 48, Inter-Institutional Agreement for Better Law-making of 13 April 2016).

²⁵ Robert Baldwin, *Rules and Government*, cit., p. 16 ff.

stringent and detailed rules ²⁶, and by rules which leave too much room for administrative discretion ²⁷.

Secondly, in order to avoid ineffectiveness, rules should be evidence-based: rule-makers must assess in advance their impacts, compared with those of alternative and feasible regulatory options, while also paying attention to the new administrative burdens (which must be limited and justified), to the impact on competition and on small and medium enterprises. In order to allow public decision-makers to find the most effective regulatory tool, impact assessment should be useful, provided that it does not assume regulatees to be perfectly rational and utility maximizers, and provided that it investigates what motivates people in a given situation, a tool which should be qualified as “cognitive-based impact assessment” (see also Sect. 4.1) ²⁸. In this framework, the specific drivers involved in compliance must be assessed: deterrence, emotions, internal motivations, ethics or social norms. For instance, a regulatory impact assessment of a piece of whistle-blower regulation which has been enriched by the above mentioned analysis might detect a possible internal motivation to report corruption and to what extent this internal motivation might have been undermined by a monetary incentive ²⁹. Otherwise, in the above-mentioned example, the ability of the four eye rule to prevent corruption would be assessed in advance, as would the effectiveness of a mechanism designed to prevent this rule from

²⁶ Eugene Bardach and Robert A. Kagan, *Going by the Book. Unreasonableness. A Twentieth Century Fund Report*, cit., p. 58; Julia Black, ‘Forms and Paradoxes of Principles Based Regulation’ [2008] n. 13 LSE Legal Studies Working Paper 16; Robert Baldwin, *Rules and Government*, cit., p. 179. These studies challenge the idea that precise and detailed rules discourage non-compliance by increasing deterrence and the probability of punishment, on one hand, and increasing settlements out of court and therefore also a return of resources, on the other (Isaac Ehrlich and Richard A. Posner, ‘An Economic Analysis of Legal Rule-making’ [1974] vol. 3, n. 1 *The Journal of Legal Studies* 257).

²⁷ Such rules could create a favourable environment for corruption (Vito Tanzi, ‘Corruption Around the World: Causes, Consequences, Scope, and Cures’ [1998] vol. 45, n. 4 IMF Staff Papers 10-11; Andrei Shleifer and Robert W. Vishny, ‘Corruption’ [1993] vol. 108, n. 3 *The Quarterly Journal of Economics* 599).

²⁸ While the EC Toolbox included biased behaviours among the problems that can justify a regulatory intervention in the first step of RIA, a cognitive-based impact assessment has not been yet developed or systematically used at European or national level (Nicoletta Rangone, ‘A Behavioural Approach to Administrative Corruption Prevention’, in Agustí Cerrillo i Martínez and Juli Ponce (eds) *Preventing Corruption and Promoting Good Government and Public Integrity* (Bruylant 2017) 75-76).

²⁹ Yuval Feldman and Orly Lobel, ‘The incentive of Matrix: The Comparative Effectiveness of Rewards, Liabilities, Duties and Protection for Reporting Illegality’ [2008] 2 *Regulation and Governance* 165-192.

backfiring, i.e. changing the responsibilities assigned to each member of the pair³⁰. A “cognitive-based impact assessment” can also help in predicting if a given bias could lead a regulatory option to fail, but also if other bias could offset it. E.g. the status quo bias, which makes individuals reluctant from acting (for instance, to switch to a new provider in a newly liberalised market) could be counteracted by the optimism bias, which makes individuals believe success from acting.

The preventive investigation into effectiveness can prove particularly difficult when (as is often the case) public interests are interdependent or contradictory (e.g. health protection and public spending limitation), or they are implemented by more than a single rule. In these cases, the assessment should include the public policy adopted to attain a given result, as well as laws and regulations which implement this policy, and all related policies which could interfere with its effectiveness.

3. Compliance, rationality and beyond

Compliance approaches can be divided into those moving within the individuals’ rationality assumption (deterrence and risk-based), and those taking into account bias and heuristics (cognitive-based). There are many nuances in between, suggesting a number of aspects to be considered.

Any given approach to compliance leads to different rules and enforcement strategies.

The classic approach to compliance is through deterrence, according to which decisions about whether to comply depend on the level of sanctions, the stringency of inspections and ex ante controls (i.e. planning and/or concession or authorisation systems). This approach has been challenged on the grounds that it is ineffective³¹, costly and non-sustainable³² for public authorities and

³⁰ As suggested by Yuval Feldman, ‘Using Behavioral Ethics to Reduce Organizational Misconduct’, cit.

³¹ Psychological experiments motivated by cognitive dissonance theory suggest that higher sanctions may increase crime (George A. Akerlof and William T. Dickens, ‘The Economic Consequences of Cognitive Dissonance’ [1982] vol. 72, n. 3 *The American Economic Review* 318; see also Bruno Frey, *Not Just for the Money. An Economic Theory of Personal Motivation* (Edward Elgar Publishing 1997) 81).

³² “Although the idea of exercising authority through social control is attractively simple, it has been widely suggested that in democratic societies the legal system cannot function if it

regulatees³³, and for having the effect of potentially diverting rules from their “desired ends”³⁴.

In the framework of the rational actor assumption, the “responsive” approach to behaviour suggests enforcement strategies to be kept to the lowest level necessary to achieve results (e.g. education and advice), while regulators escalate the “enforcement pyramid” where regulatees are non-compliant³⁵. The well-known “smart approach” extends the enforcement pyramid beyond government action, underlining the role of the other actor in effectiveness. For example, regulators might require regulatees to disclose information about their compliance with a given regulation (e.g. on pollution or food hygiene) and third parties (e.g. insurance companies or consumer associations) can use that information in order to bring pressure on those who break rules³⁶.

According to the new deterrence approach based on risk analysis, inspections and controls are targeted at where there is a higher probability of violation and the most important potential effects³⁷. A more refined approach

can influence people only by manipulating rewards and costs (...). This type of leadership is impractical because government is obliged to produce benefits or exercise coercion every time it seeks to influence citizens’ behavior“ (Tom R. Tyler, *Why People Obey the Law* (Yale University Press 1990) 22-23). “The authority must constantly demonstrate their credibility by maintaining a high level of deterrent potential, something that is difficult and sometimes impossible to do given the fiscal constrain. While our society, for example, expends large amount of money to make the risk of being caught and punished for murder sufficiently high to be a deterrent, it does not devote similarly high level of resources to combating speeding, littering, or drinking in public streets” (Tom R. Tyler, *Introduction*, in Tom R. Tyler (ed.) *Procedural Justice*, vol. I (Ashgate, Aldershot and Burlington 2005) xv and xvi).

³³ Robert Kagan and John T. Scholz, ‘The “Criminology of Corporation” and Regulatory Enforcement Strategies’, in Keith Hawkins and John M. Thomas (eds), *Enforcing Regulation* (Kluwer-Nijhoff Publishing 1984) 73.

³⁴ Robert Baldwin, *Rules and Government*, cit., p. 142. In the enforcement phase, while the move toward aggressive and legalistic enforcement should increase compliance (“inspectors armed with severe sanctions and instructed to act like policemen are not likely to be ignored”), this result should not blind to the fact that “unreasonableness and unresponsiveness associated with those regulations can keep the full potential of regulation from ever being realized” (Eugene Bardach and Robert A. Kagan, *Going by the Book. Unreasonableness. A Twentieth Century Fund Report*, cit., 93).

³⁵ Ian Ayres and John Braithwaite, *Responsive Regulation: Transcending the Deregulation Debate* (Oxford University Press 1992). In line with this approach, OECD, *International Best Practice Principles: Improving Regulatory Enforcement and Inspections* (OECD publishing 2014).

³⁶ Neil Gunningham, Peter Grabosky and Darrel Sinclair, *Smart Regulation: Designing Environmental Policy* (Oxford University Press 1998) 93.

³⁷ Philip Hampton, *Reducing administrative burdens: effective administration and enforcement* (HM Treasury 2005); OECD, *Recommendation on regulatory policy and governance* (OECD publishing 2012).

suggests that the intensity of the intervention (regulatory options or enforcement strategies) increases according to the regulatee's risk-type (related to past behaviour, culture, and attitude)³⁸, the institutional environment of the given regulation and how controls are implemented over time (really responsive risk-based approach)³⁹.

While these approaches to compliance are based on evidence of what is likely to work⁴⁰ (also suggesting a mix of enforcement strategies)⁴¹, they do not investigate all compliance drivers not related to a rational calculus.

In recent years, the compliance model has been complemented by approaches based on education, persuasion and support for compliance⁴². These approaches start from the observation that legal systems have a limited deterrence ability and that they are dependent on voluntary compliance⁴³. Cooperation and trust are fundamental in order to ease such voluntary compliance⁴⁴; supportive and cooperative public administrations

³⁸ Julia Black and Robert Baldwin, 'When Risk-Based Regulation Aims Low: Approaches and Challenges' [2012] vol. 6, n. 1 *Regulation and Governance* 2; Julia Black and Robert Baldwin, 'When Risk-Based Regulation Aims Low: A Strategic Framework' [2012] vol. 6 *Regulation and Governance* 131. For instance, increased sanctions in case of "active tax fraud by manipulation of the balance sheet", compared to cases in which taxpayers simply forget to report particular income components (Lars P. Feld and Bruno S. Frey, 'Tax Compliance as the Result of a Psychological Tax Contract: The Role of Incentives and Responsive Regulation' [2007] vol. 29 n. 1 *Law & Policy*, vol. 29, n. 1, 2007, 109).

³⁹ Robert Baldwin and Julia Black, 'Really responsive regulation' [2008] 71 *Modern Law Review* 59 ss.; Robert Baldwin and Julia Black, 'Really Responsive Risk-Based Regulation' [2010] vol. 32, n. 2 *Law & Policy*, p. 181 ff.

⁴⁰ For instance, it has been observed that people react more to the probability of being detected than to the severity of sanctions (John T. Scholz and Wayne B. Gray, 'OSHA enforcement and workplace injuries: A behavioral approach to risk assessment' [1990] vol. 3, n. 3 *Journal of Risk and Uncertainty* 284).

⁴¹ Neil Gunningham, Peter Grabosky and Darrel Sinclair, *Smart Regulation: Designing Environmental Policy*, cit., p. 422 ff.; Neil Gunningham and Darren Sinclair, 'Smart Regulation', in Peter. Drahos (ed), *Regulatory Theory. Foundations and Applications* (ANU Press 2017) 134.

⁴² OECD, *Regulatory Enforcement and Inspections*, cit., 61 ss.

⁴³ Tom R. Tyler, 'Citizens with legal procedures: a social science perspective on civil procedure reform' [1997] vol. 45 *The American Journal of Comparative Law*, 873.

⁴⁴ "Tax authorities and insurance organizations [as well as all authorities wielding power] are supposed to reduce costly punishments, provide supportive procedures and helpful information; and pursue societal goals to assure a service climate. This would, in the long run, create trust toward them which fosters cooperative behavior" (Eva Hofmann et al., 'Authorities' Coercive and Legitimate Power: The Impact on Cognitions Underlying Cooperation' [2017] vol. 8, n. 5 *Frontiers in Psychology* 13). Otherwise, trust and confidence erosion, misadministration and inefficiency create conditions for corruption: people are willing to pay in order to protect from inefficiencies (Antony D. Molina, 'Public Ethics and the Prevention of Corruption', in Agustí Cerrillo i Martínez and Juli Ponce (eds) *Preventing Corruption and Promoting Good Government and Public Integrity* 164).

provide, for instance, simplified procedures, checklists, guidelines, ad hoc answers to ease compliance⁴⁵, and enable firms which have violated rules to submit commitments (which would correct their unlawful behaviour and are effective in realizing the interests protected by the violated rules)⁴⁶. In some contexts this approach has also led to flexible compliance and enforcement⁴⁷. It is important to underline that deterrence and cooperative approaches are far from being in conflict: on one hand they are appropriate in different situations⁴⁸, on the other hand, voluntary compliance would dissipate if people believed that the law was regularly being breached with impunity by some⁴⁹. In other words, public authorities' supportive and cooperative approach can be decisive in supporting voluntary compliance only if deterrence rules and enforcements strategies are effective.

⁴⁵ See, for instance, OFGEM, *Enforcement Guidelines* (2017), points 3.29 and 3.30.

⁴⁶ E.g. art. 14-ter, Italian law n. 287/1990 on competition; and art. 45, legislative decree n. 93/2011, implementing European directives n. 2009/72/CE, n. 2009/73/CE and n. 2008/92/CE on internal market for electricity.

⁴⁷ Drawbacks to this approach include room for opportunistic use of flexibility and the skepticism of firms for fear of being sanctioned (John T. Scholz, 'Cooperation, deterrence, and the ecology of regulatory enforcement' [1984] vol. 18, n. 2 *Law and Society Review* 183 and 185 ss.); moreover, cooperative strategies require an increased administrative discretion which should be perceived as a symptom of corruption (Robert A. Kagan and John T. Scholz, 'The "Criminology of Corporation" and Regulatory Enforcement Strategies', cit., p. 80). In this enforcement or regulation dilemma, "while both the regulated firm and the government can choose a cooperative approach to regulatory enforcement and compliance, which would be optimal for both sides, both might have important incentives to choose evasive and conflictual approaches instead" (Matthew Potoski and Aseem Prakash, 'Voluntary programs, regulatory compliance and the regulation dilemma', in Christine Parker and Vibeke Lehmann Nielsen, *Explaining Compliance. Business Responses to Regulation* (Edward Elgar 2011) 247).

⁴⁸ "The cooperative strategies concentrates more enforcement activities on the small set of firms with a record on minimal compliance and on more serious, rather than technical, violations" (John T. Scholz, 'Cooperative regulatory enforcement and the politics of administrative effectiveness' [1991] vol. 85, n. 1 *American Political Science Review* 120). According to the above mentioned *Enforcement Guidelines*, OFGEM "do not normally consider alternative action to be appropriate when addressing potential breaches of competition law. It is also unlikely to be sufficient in sectoral cases when potential breaches are serious or when we have significant concerns about a company's conduct" (point 3.29).

⁴⁹ Robert A. Kagan and John T. Scholz, 'The "Criminology of Corporation" and Regulatory Enforcement Strategies', cit., 76. "Enforcement strategies that elicit feelings of resentment towards compliance and towards authority appear to lead to subsequent non-compliance among those affected. In contrast, reintegrative tactics that serve to reduce feelings of resentment appear to foster compliance with rules" (Kristina Murphy, 'Enforcing Tax Compliance: To Punish or Persuade?' [2008] vol. 38, n. 1 *Economic Analysis and Policy* 130). Moreover, for instance, it has been demonstrated that voluntary compliance increases when public authorities publicise the purchase of data on potential tax evaders from international tax havens (Dirk Bethmann and Michael Kvasnicka, 'International Tax Evasion, State Purchases of Confidential Bank Data and Voluntary Disclosures' [2016] Institute of Economic Research, Korea University, Working Paper Series, 1603).

In order to enhance voluntary compliance, the perception of fairness is also crucial (procedural justice). For instance, it has been demonstrated ⁵⁰ that people are more willing to adhere to rules if the subject enforcing such rules (judges, inspectors, but also managers, teachers, doctors etc.) are perceived as exercising their authority through fair procedures ⁵¹. These people's procedural fairness judgement is based on fairness ⁵², impartiality and consistency across people and situations of decision-making, on the possibility to participate in public decisions ⁵³ and the justification of final decisions. This "procedural justice", which has been qualified as the most important and long term driver of compliance ⁵⁴, is crucial for effectiveness. For instance, citizens who feel that they are being treated unfairly would be more prone to opposing the implementation of an administrative decision by

⁵⁰ Field research results performed during the Eighties "have not only confirmed the findings of [early research using] laboratory and scenario studies on procedural justice, but in fact have usually shown stronger procedural justice effects" (E. Allan Lind and Tom R. Tyler, *The Social Psychology of Procedural Justice* (Critical Issue in Social Justice book series, Springer 1988, 203 ff.).

⁵¹ Tom R. Tyler, 'What is Procedural Justice? Criteria Used by Citizens to Assess the Fairness of Legal Procedures' [1988] vol. 22, n. 1 *Law and Society Review* 103 ff. "The best-designed regulation is a poor tool for governing if it can only be enforced through constant surveillance and draconian punishment. It makes much more sense to seek to improve *both* the objective quality of a regulation *and* the impressions of fair treatment engendered by citizens' personal experience with the regulation" (E.A. Lind and C. Arndt, 'Perceived Fairness and Regulatory Policy' [2016] n. 6 *OECD Regulatory Policy Working paper* 10); this study offers numerous examples of research in social neuroscience leading to similar conclusions, summarized in "The Biology of Fairness" table, by E.A. LIND and C. ARNDT, *Perceived Fairness and Regulatory Policy*, cit., p. 8.

⁵² "The absence of considerations of fairness and loyalty from standard economic theory is one of the most striking contrasts between this body of theory and other social sciences-and also between economic theory and lay intuition about human behavior" (Daniel Kahneman, Jack L. Knetsch, Richard H. Thaler, 'Fairness and the Assumption of Economics' [1986] vol. 59, n. 4 *The Journal of Business* S285).

⁵³ Differently from consultation, which "may help the administration attain an accurate decision, (...) participation is based on a non-instrumental rationale, in the sense that it ensures that human dignity is adequately respected by public administrators when taking decisions that potentially affect the lives of individuals and groups. Following another line of reasoning, participation performs a democratic role, in the sense of allowing citizens to express their views within decision-making processes" (Giacinto Della Cananea, *Due Process of Law Beyond the State: Requirements of Administrative Procedure*, cit., 110-111). See also Alberto Alemanno, 'Stakeholder Engagement in Regulatory Policy' [2015] *Regulatory Policy in Perspective: A Reader's Companion to the OECD Regulatory Policy Outlook 2015* (OECD Publishing 2015).

⁵⁴ Florentin Blanc, *From Chasing Violation to Managing Risks. Origins, Challenges and Evolutions in Regulatory Inspections*, Edward Elgar, 2018.

challenging that decision in court; employees who feel that they are being treated unfairly are more likely to breach corruption prevention rules⁵⁵.

The so-called expressive function of law is among other compliance drivers: people respond to the signals embodied in rules, even in the absence of sanctions, beyond simple calculative effects⁵⁶. In other words, a widespread compliance would occur “just because it is the law”⁵⁷ and would be related to the importance that individuals usually place on the opinions of others. This should be among the reasons why some firms go well beyond compliance measures required by legal rules, “even when enforcement mechanisms are flawed”⁵⁸.

Internal motivation to comply can also be decisive in the effectiveness of rules.⁵⁹ For instance, many experiments in different fields have demonstrated that penalties are not effective and may even be counterproductive when they “interfere[s] with the moral dimension of compliance activity”⁶⁰. In this framework, one explanation of the decrease in compliance after an audit and fines is the perceived lack of trust from public

⁵⁵ Linda Trevino and Katherine A. Nelson, ‘Managing business ethics: Straight talk about how to do it right’ (5th ed. Hoboken NJ, John Wiley and Sons Publishers 2011, 24 and 304). Antony D. Molina, *Public Ethics and the Prevention of Corruption*, cit., 161.

⁵⁶ See, among others, Cass R. Sunstein, ‘On the Expressive Function of Law’ [1996] vol. 144 *University of Pennsylvania Law Review* 2021 ff.

⁵⁷ Ian Ayres and John Braithwaite, *Responsive Regulation: Transcending the Deregulation Debate*, cit., 19.

⁵⁸ Neil Gunningham, Robert A. Kagan and Dorothy Thornton, *Shades of Green: Business, Regulation and Enforcement* (Stanford University Press 2003) 21-22; see also Robert A. Kagan and Lee Axelrad, *Regulatory Encounters: Multinational Corporations and Adversarial Legalism* (Univ. of California Press 2000); Neil Gunningham and Robert A. Kagan, ‘Regulation and Business Behavior’ [2005] *Law & Policy* 217.

⁵⁹ Nina Mazar and Dan Ariely, ‘Dishonesty in Everyday Life and Its Policy Implications’ [2006] vol. 25, n. 1 *Journal of Public Policy and Marketing* 118.

⁶⁰ “Where certain types of misconduct were once inherently wrong, the introduction of a fine may inadvertently specify the financial tipping point at which the costs of reporting misconduct outweigh the moral and social benefits” (Yuval Feldman and Orly Lobel, *The Incentive of Matrix: The Comparative Effectiveness of Rewards, Liabilities, Duties and Protection for Reporting Illegality* [2010] vol. 88, n. 6 *Texas Law Review* 1182). In the famous study on the reaction to a monetary fine imposed on parents who were late picking up their child at school, the observation of a significant increase in the number of parents coming late, has been explained with the fact that the behavior that was previously wrong in itself has in fact a price and this price allowed parents to be comfortable being late (Uri Gneezy and Aldo Rustichini, ‘A Fine is a Price’ [2000] vol. 29, n. 1 *Journal of Legal Studies* 1 ff.). On blood donation and on the implication of monetary rewards for social polity generally, see Richard M. Titmuss, *The gift relationship: From Human Blood to Social Polity* (Pantheon Books 1971). More, recently, N. Lacetera and M. Macis, ‘Do all material incentives for pro-social activities backfire? The response to cash and non-cash incentives for blood donations’ [2010] vol. 31 *Journal of Economic Psychology* 738 ff.

authorities leading to a crowding out of the intrinsic motivation to cooperate⁶¹.

A step forward in increasing effectiveness is taken by using insights from the cognitive sciences in the life-cycle of rules, particularly in drafting regulatory options and in the design of enforcement strategies.

4. Cognitive sciences for effectiveness

4.1 Collecting cognitive insights in public decision-making: a challenge for public authorities

Cognitive sciences have demonstrated that the decision to comply is not necessarily based on a cost-benefit analysis: compliance is shaped by social norms⁶², imitation⁶³, previous experiences (e.g. availability bias)⁶⁴, and ethics⁶⁵. Individuals also tend to be bad at evaluating risk and probability⁶⁶. Moreover, they tend to view themselves as ethical agents⁶⁷. These biases, social influences and people's limited awareness of the full meaning of their own behavior challenges the effectiveness of traditional rules and enforcement strategies in attaining public goals (such as curbing

⁶¹ On crowding effects see Bruno S. Frey, *Not Just for the Money. An Economic Theory of Personal Motivation* (Edward Elgar Publishing 1997).

⁶² Jessica M. Nolan, P. Wesley Schultz, Robert B. Cialdini, Noah J. Goldstein and Vidas Griskevicius, 'The constructive, destructive, and reconstructive power of social norms' [2007] vol. 18 *Psychol. Science* 429 ff.

⁶³ Robert B. Cialdini, *Influence. The Psychology of Persuasion* (New York 1984); Robert B. Cialdini, Carl A. Kallgren and Raymond R. Reno, 'A focus theory of normative conduct' [1991] vol. 24 *Advances in Experimental Social Psychology* 201 ff.

⁶⁴ Amos Tversky and Daniel Kahneman, 'Availability: A Heuristic for Judging Frequency and Probability' [1973] vol. *Cog. Psych.* 207; Amos Tversky and Daniel Kahneman, 'Judgment under uncertainty: Heuristics and biases' [1974] vol. 185, n. 4157 *Sciences* 1124 ff.; Thomas Gilovich, Dale Griffin and Daniel Kahneman (eds), *Heuristics and Biases: The Psychology of Intuitive Judgement* (Cambridge University Press 2002).

⁶⁵ Christopher Hodges, *Law and Corporate Behaviour. Integrating Theories of Regulation, Enforcement, Compliance and Ethics* (Hart Publishing 2015).

⁶⁶ Christine Jolls, 'Behavioral Economics Analysis of Redistributive Legal Rules' [1998] vol. 51 *Vanderbilt Law Review* 1653 ff.; Amos Tversky and Daniel Kahneman, 'Belief in the law of small numbers' [1971] vol. 76, n. 2 *Psychological Bulletin* 105 ff.

⁶⁷ On self-deception and self-serving bias, see Shaul Shalvi et al. 'Justified ethicality: Observing desired counterfactuals modifies ethical perceptions and behavior' [2011] vol. 115, n. 2 *Organizational Behavior and Human Decision Processes* 181 ff.; Dolly Chugh, Max H. Bazerman and Mahzarin R. Banaji, 'Bounded ethicality as a psychological barrier to recognizing conflicts of interests', in Don A. More et al. (eds), *Conflicts of interests: challenges and solutions in business, law, medicine, and public policy* (Cambridge University Press 2005) 74 ff.

corruption or - in general - wrongdoing, liberalizing markets, protecting the environment, consumers or investors). For these reasons, knowing how people and firms decide (consciously or unconsciously) to comply with a given rule allows public authorities to draft effective laws and regulation and to design effective controls, which in turn leads to increased compliance. This effectiveness (of rules and controls) is related to the fact that they are based on case-specific empirical evidence.

Deciding how and whether to use rules can indeed be guided by an analysis of targets (e.g. kinds of individuals being controlled, be they highly informed, rational and well-disposed to comply or not) and by cognitive issues. As is well known, according to the risk-based regulation doctrine, a regulatory strategy that is “very responsive” to regulatees’ behaviour should increase its intensity (e.g. using command and control instead of incentive or disclosure regulation) according to the risk-type of the regulatees⁶⁸. This sophisticated model tailored to end-users should be enriched by another which considers whether a cognitive limitation can hinder regulatees’ capacity and intention to comply. This approach could lead to drafting differentiated regulation according to the different degree regulatees are affected by cognitive bias, on the one hand, and their ability and amenability to be empowered, on the other (i.e. regulatees bias-type)⁶⁹.

Therefore, bias and heuristics (as well as other compliance drivers) could play a crucial role in effectiveness, provided that the public decision-making process changes in order to collect and use such evidence.

First of all, cognitive findings are crucial in the problem definition phase, i.e. when public decision-makers identify the problem which affects a given market and the causes of such a problem. Indeed, a regulatory

⁶⁸ While some regulatees are indeed well motivated with a high capacity to comply (which would justify a less intensive intervention), others are motivated but with low capacity to comply; some regulatees are less motivated while characterised by a high capacity to comply and others are less motivated with less capacity to comply, a situation which would justify a more intensive intervention (Julia Black and Robert Baldwin, ‘When Risk-Based Regulation Aims Low: Approaches and Challenges’, cit.; Julia Black and Robert Baldwin, ‘When Risk-Based Regulation Aims Low: A Strategic Framework’ cit.).

⁶⁹ Fabiana Di Porto and Nicoletta Rangone, *Proportionality of regulation: what role for cognitive sciences*, paper presented at the annual conference of the International Research Society for Public Management, Hong Kong 2016; see also Fabiana Di Porto, ‘Regolazione, principio di proporzionalità e scienze cognitive’ [2018] n. 4 *Federalismi.it*.

intervention might be seen to be justified if the driver of such a problem is that “behaviours are biased and individuals do not decide based on their own best interests”⁷⁰.

Secondly, whenever a behavioural element exists, specific cognitive-based field or lab experiments should be performed during the information gathering phase, in order to test in advance the regulatory option that better addresses the problem⁷¹.

Thirdly, consultation with stakeholders must be designed in order to neutralise or bring out people’s cognitive limitations. On one hand, in the selection of stakeholders to be involved in consultations, a special attention should be paid to those whose bias might prevent regulation from effectiveness⁷². On the other hand, consultation procedures (which imply an immediate outlay for future and unsure advantages) should be as simple as possible in order to avoid participation being undermined by loss aversion and present bias. The framing and salience of the consultation documents are also crucial elements in dealing with stakeholders’ bias⁷³. In this way only, consultation can be an effective tool for collecting data and to enable end-users participation in decision-making (which is also beneficial from a procedural justice point of view).

Fourthly, cognitive insights enrich the traditional regulatory toolkit with new tools (nudging and cognitive empowerment, analysed in Section 4.2) and should strengthen the effectiveness of enforcement strategies (Sect. 4.3).

Finally, the evaluation of potential impact of alternative regulatory options should be performed in a way that brings out and considers how bias

⁷⁰ European Commission, *Toolbox on Better Regulation*, 2017, p. 85.

⁷¹ The performance of an ad hoc experiment is to be considered the preferred approach, while interventions drafted on the basis of a literature review alone do not avoid ineffectiveness (European Commission, *Behavioural Insight Applied Policy*, 2016, p. 17).

⁷² Therefore, if the regulatory problem is a low switching rate, those invited should not be only firms and associations of consumers, but also individual consumers. Inertia bias could also prevent stakeholders from participation to consultation (therefore, the consultation method should be selected accordingly, for instance inviting consumers to seminars, organizing on-line forum, or providing simplified questionnaires).

⁷³ Such as information overload (which could stop from answering documents which are too long and complicated) or choice overload (which could paralyze people confronted to many alternatives); overconfidence (which prevents people from neutrally evaluating their own ability or attitude), or confirmation (which leads people to select information which confirms their belief, while not paying attention to a different view).

affecting potential end-users could undermine the effectiveness of such options ⁷⁴.

This approach imposes a radical change on the public decision-making process. It requires expertise which does not usually characterize public authorities, neither governments nor parliaments. Moreover, a cognitive-based approach to public decision-making implies an increase in costs and time (e.g. the performance of a behavioural experiment can last between six and twelve months), while politicians usually want an immediate answer to problems.

Therefore, on one hand a behavioural approach is useful only where the main objective of rules is a change in individual behaviour (such as food consumption, waste recycling, transport habits, blood donation), or where people's response might hinder the effectiveness of rules (e.g. all rules intended to protect consumers, such as the disclosure regulation in financial markets or in the gambling industry). On the other hand, such a "behavioural element" must also be relevant, in order to justify such increases in costs and time ⁷⁵.

4.2 Cognitive sciences for effective rules

Cognitive limitations might impact differently on different regulatory strategies, sometimes being a reason for choosing a given approach, sometimes suggesting a preference for a different strategy.

For instance, command and control, such as bans, duties, or standards can reduce creative compliance and might benefit people affected by overconfidence bias (e.g. managers of listed companies or intermediaries in financial markets) or by inertia (e.g. people who want but are unable to stop smoking). However, it could lead to excessive limitations on those not affected

⁷⁴ For instance, while impact assessment (IA) based on cost-benefit analysis usually assumes people's rationality, IA should include a risk analysis which takes into account end-users' biases as a risk to be assessed in terms of probability and effects (Fabiana Di Porto and Nicoletta Rangone, 'Behavioural Sciences in Practice: Lessons for EU Policymakers', in Alberto Alemanno and Anne-Lise Sibony (eds), *Nudge and the Law: A European Perspective?* (Hart Publishing 2015) 33).

⁷⁵ Fabiana Di Porto and Nicoletta Rangone, 'Behavioural Sciences in Practice: Lessons for EU Policymakers' cit., 30-31.

by the above mentioned bias and to over-regulation ⁷⁶. Moreover, its effectiveness is strongly affected by the expectations and generalized behavior (social norms).

Information disclosure strategy is theoretically choice preserving, while it is often framed in a way that influence the choices of regulatees or their understanding of a given problem, phenomenon etc. Where framing is used in order to overcome people's cognitive limitations, the framing effect bias could justify this regulatory strategy. At the same time, a number of empirical studies show that individuals do not make full use of the information provided because they select information which confirms their already formed beliefs (confirmation bias) and are paradoxically confused by an increased amount of information which could lead them to inertia (information overload bias). Therefore, these biases might hinder information disclosure effectiveness, while decision-makers should also use cognitive insights in order to build a more comprehensive strategy to inform, named cognitive empowerment ⁷⁷.

Economic incentives, including differentiated tax regimes or subsidies (for instance benefits for energy savers or higher taxes for polluters), assume the rationality of regulatees and disregard any motivations that differ from economic ones. Therefore, while incentive regulation preserves individual autonomy and is quite easy to enforce, it can lead to a crowding out of the internal motivation to comply. Moreover, present bias (which leads individuals to place disproportionate weight on present rather than distant rewards or burdens) and loss aversion often lead to inertia, challenging the effectiveness of this regulatory strategy.

In addition to these main traditional regulatory strategies, cognitive studies have contributed to the emergence of new approaches which are cognitive-based: nudging and cognitive empowerment. While both can be classified as non-economic incentives, nudging designs the environmental

⁷⁶ On weaknesses and strengths of traditional and cognitive-based regulatory strategies see Fabiana Di Porto and Nicoletta Rangone, 'Behavioural Sciences in Practice: Lessons for EU Policymakers', cit., 55-56.

⁷⁷ Fabiana Di Porto, *La regolazione degli obblighi informativi. Le sfide delle scienze cognitive e dei big data* (Editoriale Scientifica 2017), 126 ff.

choice in order to prompt a certain behaviour somehow exploiting an individual's bias, and cognitive empowerment is aimed at overcoming them ⁷⁸.

The most famous example of nudging is the default rule, which specifies an outcome if people make no choice. It leverages on inertia, status quo and loss aversion bias in order to nudge people to choose something that is considered better for them (e.g. a default according to which no additional services can be sold to consumers without their express consent) or for society as a whole (e.g. in some countries people save for retirement or are considered organ donors by default). This approach is effective because it avoids the regulatees' compliance decision step: the compliance is by default, provided that end-users do not opt out. Another example of default is fixed monetary limit in on-line gambling, which leverage on bias such as inertia that make people stick to default setting in betting decisions. Examples of empowerment are simplification of information given to consumers (in order to avoid information overload); standardization of information (which eases comparisons of products or services); simplification of information requested of consumers or of activities to be performed by individuals (e.g. pro-choice web applications aimed at facilitating people's choice by making them easy), targeted education, and all sort of solutions that activate slow and accurate thinking (e.g. in the above mentioned example of monetary limit in on-line gambling, this nudge can be combined with alerts which disturb the spinning rhythm and give information about time and amount spent betting in order to slow down the spinning and to reduce the amount that gamblers choose to bet per spin) ⁷⁹. And then there is the grey area of tools which are in between nudging and empowerment: the framing effect can be used to empower but at the same time it contains some manipulative effects. For instance, the

⁷⁸ This distinction has been pointed out in 2015 by Fabiana Di Porto and Nicoletta Rangone ('Behavioural Sciences in Practice: Lessons for EU Policymakers', cit., 36 ff., where a classification of types of nudging and empowerment is given, along with many examples). Cass R. Sunstein introduced the similar notion of "educative nudges" (*The ethics of influence: Government in the age of behavioral science* (Cambridge University Press 2016, first mentioned at p. 16) and Till Grüne-Yanoff and Ralph Hertwig that of "boost" ('Nudge versus boost: How coherent are policy and theory?' [2016] vol. 26, n. 1-2, *Minds and Machines*, 149 ff.).

⁷⁹ Cristiano Codagnone et al., 'Study on online gambling and adequate measures for the protection on consumers of gambling services', Final Report for the European Commission, 2014, p. 20-21 and 61-62.

presentation of alternative therapies in terms of percentage of life or of probability of dying ⁸⁰, or information on risk related to gambling in terms of probability of win or losses: this makes a great difference in individual decision making.

Nudging and empowerment can characterize the regulatory content rules and their communication strategy (e.g. through letters conveying a comparative message ⁸¹), or they can be supported by a public policy or a public campaign ⁸². Nudging can also be introduced at administrative level through forms, in support or without a previous rule imposing it (e.g. forms which ask to be signed at the beginning ⁸³), as empowerment does (e.g. prefilled forms in order to “make things easier”).

4.3 Cognitive insights for effective enforcement strategies

As already mentioned, effective controls lead to increased compliance and thus to increases in effectiveness of rules whose compliance is under control. The cognitive-based approach should make enforcement controls more effective by taking advantage of the limited ability of individuals to assess risks and probabilities.

For instance, tax compliance cognitive experiments show that evasion decreases where new companies are monitored at the very beginning of their

⁸⁰ Barbara J. McNeil, Stephen G. Pauker, Harold C. Sox and Amos Tversky, ‘On the elicitation of preferences for alternative therapies’ [1982] vol. 306 *N. Engl. J. Med.* 1259 ff. How many alternative options are offered is also an issue (Amos Tversky and Eldar Shafir, ‘Choice under conflict: the dynamics of deferred choice’ [1992] vol. 3, n. 6 *Psychological Science* 358; Janet A. Schwartz and Gretchen B. Chapman, ‘Are more options always better? The attraction effect in physicians’ decisions about medications’ [1999] vol. 19, n. 3 *Medical Decision Making* 316).

⁸¹ Cabinet Office, *Applying behavioural insights to reduce fraud error and debt* (The British Psychological Society, Promoting excellence in psychology 2012); see also Michael Hallsworth, John A. List, Robert D. Metcalfe and Ivo Vlaev, ‘The Behavioralist as Tax Collector: Using Natural Field Experiments to Enhance Tax Compliance’ [2014] n. 20007 NBER Working Paper; Marsha Blumenthal, Charles Christian and Joel Slemrod, ‘Do Normative Appeals Affect Tax Compliance? Evidence from a Controlled Experiment in Minnesota’ [2001] vol. 54 n. 1 *National Tax Journal* 125.

⁸² For instance, the introduction of a given choice for architectures in canteens or supermarket in the well-known example described in the best seller by Richard H. Thaler and Cass R. Sunstein, *Nudge. Improving Decisions about Health, Wealth, and Happiness* (Yale University Press 2008) 67.

⁸³ Lisa L. Shu, Nina Mazar, Francesca Gino, Dan Ariely and Max H. Bazerman, ‘Signing at the Beginning Makes Ethics Salient and Decreases Dishonest Self-Reports in Comparison to Signing at the End’ [2012] vol. 109 *Proceedings of the National Academy of Sciences* 15197 ff.; US Social and Behavioral Sciences Team, *Annual Report* (2015) 15.

“fiscal lives”. This “echo effect”⁸⁴ bias is related to an over-estimation of the probability of being controlled, related to the very earliest controls. The “bomb crater” bias derives from a similar limited capacity to evaluate risks⁸⁵, people believing that it is impossible to be checked twice in a row. Inspections should be planned accordingly: an immediate check for newly created firms and inspections when firms do not expect to be controlled in order to change their risk perception by modifying their personal reference point⁸⁶ and induce them to be more compliant in the future.

This cognitive-based approach to enforcement controls planning should not be a stand-alone measure or substitute other enforcement approaches. Rather, it should complement the risk-based and proportionality features of inspection planning. Not only should regulatory compliance directed towards well-intentioned companies start with persuasion and inspection, whereas fines should be used for more risky or less compliant companies (according to the seminal theory of responsive regulation)⁸⁷; but controls should also be organized in order to take advantage of firms’ limited ability to assess risks. This would help in organising controls which would be more effective in detecting past infringements and in reducing future infringements by creating the belief of being under strict public control.

Moreover, a fair (procedural fairness) and supportive attitude among inspectors (cooperative enforcement strategy) is crucial in determining regulatees’ future attitude to compliance and not to interfering with

⁸⁴ Luigi Mittone, ‘Dynamic Behaviour in Tax Evasion: an Experimental Approach’ [2006] vol. 35, n. 5 *The Journal of Socio-Economics* 813 ff.

⁸⁵ Barbara Kastlunger, Erich Kirchler, Luigi Mittone and Julia Pitters, ‘Sequence of audits, tax compliance, and taxpaying strategies’ [2009] vol. 30, n. 3 *Journal of Economic Psychology* 407 ff.

⁸⁶ The personal reference point is a psychological criterion or heuristic that guides decision-making processes by setting a standard against which to compare the choice (Daniel Kahneman and Amos Tversky, ‘Prospect theory: an analysis of decision under risk’, cit., 263 ff.).

⁸⁷ “Recently created business should be (...) first given a chance to improve (...) so as to promote a culture of openness on their side. (...) Businesses which have a history of compliance should be gradually checked less often (their risk level being rated lower) – inspectors should also generally start with improvement notices or (in the case of lesser violations) verbal warnings, except in cases of major, imminent hazard” (OECD, *Regulatory Enforcement and Inspections*, 2014, p. 28 and 34, inspired by the theory of responsive regulation developed by Ayres and Braithwaite).

voluntary compliance (service for client vs. cops and robbers)⁸⁸. It is a fragile equilibrium: excessive deterrence effort could reduce voluntary compliance⁸⁹, while voluntary compliance would disappear in the absence of the certainty of punishment.

There are other tools which, in the enforcement phase, can be implemented in order to incentivize compliance and thus to increase the effectiveness of rules. Some of them are intended to reduce the administrative burden of controls⁹⁰, others tend to support compliance through targeted information which acts as a stimulus to compliance. The latter, such as compliance ratings or compliance records disclosure, are intended to make compliance records salient or provide assurance to customers that a business has been reviewed by a third party for a specific regulation compliance and offers traceability of such. Cognitive insights can be used in order to increase the effectiveness of this tool; for instance, by an adequate frame of salient information, the compliance rating can motivate individuals or firms to improve compliance, help in overcoming inertia and status quo biases, and in changing the self-reference point⁹¹.

⁸⁸ Education, persuasion and dialogue are strategic in order to gain and maintain compliance of most taxpayers; “however, in the case of voluntary and repeated non-cooperation, severe economic and legal sanctions come into operation” (Erich Kirchler and Erik Hoelzl, ‘Modelling Taxpayers’ Behaviour as a Function of Interaction Between Tax Authorities and Taxpayers’, in E. Elfers, P. Verboon e W. Huisman (eds), *Managing and Maintaining Compliance* (Boom Legal Publisher 2006) 5-6). At the same time, public authorities should react differently to “active tax fraud by manipulation of the balance sheet, and passive tax evasion when taxpayers forget to report particular income components”, according to the responsive regulation approach (Lars P. Feld and Bruno S. Frey, ‘Tax Compliance as the Result of a Psychological Tax Contract: The Role of Incentives and Responsive Regulation’ [2007] vol. 29, n. 1 *Law & Policy* 109).

⁸⁹ In the tax sector, it has been demonstrated that more auditing can be backfire (while compliance increases until a certain auditing level, it decreases beyond that level). The reduced compliance is due to distrust created in taxpayers and by the perception that tax authority and its enforcement actions are excessive and unfair (Juan P. Mendoza, Jacco L. Wielhouwer and Erich Kirchler, ‘The backfiring effect of auditing on tax compliance’ [2017] vol. 62, n. 11 *Journal of Economic Psychology* 284 ss.).

⁹⁰ For instance, the “inspection holiday” puts a frequency cap on inspections for businesses with track records of accountability which are rewarded with fewer inspections focusing controls on “bad performer” firms (Rogier de Boer, *Regulatory enforcement and inspections. Dutch approach*, October 2012). A similar recommendation is formulated by the OECD, which suggests limiting “re-inspection of the same issue by different inspectorates in the same business within a given period (e.g. one year), except if problems have been identified in the first visit” (OECD, *Best Practices Principles for Regulatory Policies*, cit., 44).

⁹¹ Robert B. Cialdini, *Influence. The Psychology of Persuasion*, cit.; Jessica M. Nolan, P. Wesley Schultz, Robert B. Cialdini, Noah J. Goldstein and Vladas Griskevicius, *The Constructive, Destructive, and Reconstructive Power of Social Norms*, cit., 249 ff.

One example is food hygiene rating based on simplified and summarized information on the compliance rate with hygiene law and regulation, provided through numbers (0-4), letters (A-C, grade pending) or smiley faces summarising the inspection results ranging from a very good rating to urgent improvement needed⁹². These disclosure compliance records increase the effectiveness both of enforcement (controls) and rules, thus increasing compliance. Its effectiveness is strictly related to their widespread use. Therefore, a compulsory disclosure of the rating could be the best regulatory approach⁹³, until disclosure becomes a social norm (or at least consumers demand firms to provide the information in question). Another issue is the appropriateness of the information provided. To this aim, grades should summarize the compliance level in all aspects relevant to consumers (e.g. food safety, food contamination and labelling), and display the result of recent and previous inspections (covering, for instance, one year of activities). The impact of the framing and information provided should of course be tested in advance in order to find out the expected effectiveness.

Another example of compliance records disclosure is the so-called shaming lists published by many governments around the world, with names, addresses and other information on individuals and firms who have committed tax evasion⁹⁴, with yet others showing photos⁹⁵. Differently from the rating systems, it makes public and salient only negative behaviour and it leverages on the psychological cost of the social blame⁹⁶. Cognitive insights

⁹² The Food Hygiene Rating Scheme has worked successfully in England, Wales and Northern Ireland was launched since 2010, in New York City since 2010, in Los Angeles since 1998.

⁹³ Data referred to 2013, shows that “the majority of these systems are mandatory (Denmark, Canada (Toronto), USA (New York, Los Angeles, San Diego, Ohio, Kentucky), Singapore, and New Zealand, with semi-voluntary systems existing in the UK (England, Wales, Northern Island, Scotland)” (NSW Food Authority, *Progress of ‘Scores on Doors’ (Food Hygiene Rating Scheme) in NSW*, June 2013 CP069/1306).

⁹⁴ More than twenty US states have shaming lists on internet, e.g. New York, <https://www.tax.ny.gov/enforcement/warrants.htm>, accessed January 10, 2018, Florida http://floridarevenue.com/taxes/compliance/Pages/delinquent_taxpayer.aspx, accessed January 10, 2018).

⁹⁵ For instance, the UK HM Revenue and Customs published in 2013 a photo gallery of the *Most Wanted tax fugitives* (<https://www.gov.uk/government/news/hmrcs-most-wanted-gallery-of-tax-fugitives-published-as-another-caught>, accessed in June 2018).

⁹⁶ Establishing whether targeted transparency based on a positive framing is more effective than a negative one is something that should be established through ad hoc cognitive experiments.

can be used in order to increase the effectiveness of this tool also, and thus increase the effectiveness of regulation.

5. Attaining effectiveness requires public authorities to rethink traditional tools and procedures

Formal and substantive effectiveness are two strictly related faces: effectiveness needs formal compliance but is not merely a matter of compliance with the term of the rules. Effectiveness is also related to compliance with the spirit of the law and regulation, i.e. their “desired ends”.

In order to attain effectiveness in this broader view, all compliance drivers (such as rational calculus, emotions, internal motivations, ethics etc.) should be taken into account by decision-makers ⁹⁷.

Enriching the rationality assumption with other drivers of compliance does not mean dismissing the homo economicus model ⁹⁸ or any related traditional rules (from command and control to information disclosure) or enforcement tools (such as inspection and sanctions), which conversely remain crucial for the purpose of supporting voluntary compliance and for preventing non-compliance.

However, in order to be effective, deterrence should be calibrated by a risk-based, responsive and proportional approach to (simplified) rules and enforcement strategies. Trust in public authorities, as well as supportive and cooperative public administrations are also fundamental in order to ease compliance and to increase voluntary compliance. Moreover, whenever the

⁹⁷ It is important to underline that all the above mentioned theories on compliance do not suggest a new model of human behavior; alternatively to building an overarching model of man, Bruno S. Frey (*Not Just for the Money. An Economic Theory of Personal Motivation* (Edward Elgar Publishing 1997) 124) suggests leaving “the partial models including some specific psychological effects as they are, and regulates the task of choosing the appropriate model to the problem at hand”.

⁹⁸ It is not the purpose of this paper to determine whether are to be preferred theories build on the Simon’s notion of bounded rationality (e.g. Amos Tversky and Daniel Kahneman, ‘Judgment under Uncertainty: Heuristics and Biases’, cit.; Richard H. Thaler and Cass R. Sunstein, *Nudge. Improving Decisions about Health, Wealth, and Happiness*, cit.; and, among others, Ryan Bobb and Richard H. Pildes, ‘How behavioural economics trims its sails and why’ [2014] vol. 127, Harvard Law Review, 1612), or the approach which “presume rationality when evidence [of biased behaviours] is lacking” (Alan Schwartz, ‘Regulating for rationality’, cit., 1405-1406; in this line of thinking see also, among others, Bruno Frey, *Not Just for the Money. An Economic Theory of Personal Motivation*, cit.). However it seems to be unquestioned that cognitive findings lead to a richer and “more psychological model of human behaviour” (Ibid. 118).

main objective of a rule is to change individual behaviour, a cognitive-based approach should complement these views in order to help in increasing the effectiveness of rules and enforcement strategies.

Assessing the specific compliance drivers and potential impact of regulatory options in rule-making and law-making is a very complex task which requires new expertise, a strong political will and a sharp cultural change, but it can prevent rules and enforcement strategies from being ineffective.