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Refining Reflexive Environmental Law by Nature and Nurture: Autonomy, Accountability, and Adjustability

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Abstract

Reflexive environmental law (REL) enables an understanding of how law builds potential for private company reflexivity. Reflexivity helps to avoid lock-in, and enhances learning and self-organization to resolve complex sustainability challenges. Thus far, REL theory has excluded traditional command-and-control regulation as a form of REL. This limits the potential of REL to understand how legislation can drive reflexivity and create more effective governance. Our framework expands the definition of REL and sets out six types of regulatory instrument found in legislation that may, or may not, constitute forms of REL. The framework comprises three reflexive drivers – autonomy, accountability, and adjustability – and, under these, eleven REL techniques. Through examples taken from European environmental legislation, we explain the drivers' relationship with different regulatory instruments. This taxonomy empowers regulators and scholars to understand both the reflexive potential of regulatory instruments and the possibility to make instruments more reflexive in specific contexts.

Keywords: Reflexive law; Reflexive environmental law; Reflexive regulation; Environmental regulation; Public regulation

1. Introduction

Private companies, including transnational corporations, play a crucial role in tackling complex and global sustainability challenges, such as the wicked problems of climate change, human health, and waste and pollution management.¹ Not only is

¹ For a review of governance by transnational corporations see T. Bartley, 'Transnational Corporations and Global Governance' (2018) 44(1) *Annual Review of Sociology*, pp. 145–65. For details of these wicked environmental problems see W. Steffen, 'A Truly Complex and Diabolical Policy Problem', in S. Dryzek, R. Norgaard & D. Schlosberg (eds), *The Oxford Handbook of Climate Change and Society* (Oxford University Press, 2011), pp. 21–37; G. Salvia et al., 'The Wicked Problem of Waste Management: An Attention-Based Analysis of Stakeholder Behaviours' (2021) 326 *Journal of Cleaner Production*, article 129200; T. Narancic & K. O'Connor, 'Plastic Waste as a Global Challenge: Are Biodegradable

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their knowledge of their own products and services fundamental in resolving end-of-pipe environmental impacts,² companies play a role in accelerating sustainable innovation,³ technical or procedural efficiency,⁴ and the implementation of private regulatory initiatives.⁵ Nonetheless, sustainability challenges persist and corporate actions must be guided and steered towards sustainability.

Legislation (legal acts issued by legislative bodies such as parliaments) remains a crucial governance mechanism in shaping the actions of private companies and help to combat today's sustainability challenges.⁶ Consisting of detailed documents, which often contain a plethora of regulatory instruments to steer corporate behaviour, the most common legislative instruments used in public regulation are command-and-control rules that prescribe a specific technology or performance for companies to adopt. However, other forms of regulatory instrument exist and are increasingly common; these include market-based rules that incentivize companies to abate pollution; disclosure-based instruments that promote improved cooperation through transparency;⁷ procedure-based instruments that establish procedures for company self-assessment and sustainability improvements;⁸ and instruments requiring self-regulatory initiatives to be established by the private sector (self-regulation-based instruments).⁹

Plastics the Answer to the Plastic Waste Problem?' (2018) 165(2) *Microbiology*, pp. 129–37. Also, some solutions to address these problems, e.g., the circular economy, are argued to be wicked/complex problems; see S. Sediri et al., 'Transformability as a Wicked Problem: A Cautionary Tale?' (2020) 12(15) *Sustainability*, article 5895.

- ² K. Ladeur, 'Coping with Uncertainty: Ecological Risks and the Proceduralization of Environmental Law', in G. Teubner, L. Farmer & D. Murphy (eds), *Environmental Law and Ecological Responsibility: The Concept and Practice of Ecological Self-Organization* (John Wiley & Sons, 1994), pp. 299–366, at 322–9.
- ³ R. Dangelico, P. Pontrandolfo & D. Pujari, 'Developing Sustainable New Products in the Textile and Upholstered Furniture Industries: Role of External Integrative Capabilities' (2013) 30(4) *Journal of Product Innovation Management*, pp. 642–58.
- ⁴ J. Carrillo-Hermosilla, P. del Río & T. Könnölä, 'Diversity of Eco-Innovations: Reflections from Selected Case Studies' (2010) 18(10) *Journal of Cleaner Production*, pp. 1073–83; R. Adams et al., 'Sustainability-Oriented Innovation: A Systematic Review' (2016) 18(2) *International Journal of Management Reviews*, pp. 180–205.
- ⁵ N. Schmid et al., 'Governing Complex Societal Problems: The Impact of Private on Public Regulation through Technological Change' (2021) 15(3) *Regulation & Governance*, pp. 840–55.
- ⁶ See E. Scotford, 'Legislation and the Stress of Environmental Problems' (2021) 74(1) *Current Legal Problems*, pp. 299–327; S. Eskander, S. Fankhauser & J. Setzer, 'Global Lessons from Climate Change Legislation and Litigation' (2021) 2(1) *Environmental and Energy Policy and the Economy*, pp. 44–82; I. Conti et al., 'Legislation to Limit the Environmental Plastic and Microplastic Pollution and Their Influence on Human Exposure' (2021) 288 *Environmental Pollution*, article 117708; B.B. Zhang, L. Yu & C.W. Sun, 'How Does Urban Environmental Legislation Guide the Green Transition of Enterprises? Based on the Perspective of Enterprises' Green Total Factor Productivity' (2022) 110(June) *Energy Economics*, article 106032.
- ⁷ R.M. Friedman, D. Downing & E.M. Gunn, 'Environmental Policy Instrument Choice: The Challenge of Competing Goals' (2000) 10(2) *Duke Environmental Law and Policy Forum*, pp. 327–88, at 336; R. Baldwin, M. Cave & M. Lodge, *Understanding Regulation: Theory, Strategy, and Practice* (Oxford University Press, 2nd edn, 2011).
- ⁸ Such as in the European Union (EU) environmental impact assessment (EIA) Directive 2014/52/EU amending Directive 2011/92/EU on the Assessment of the Effects of Certain Public and Private Projects on the Environment [2014] OJ L 124/1.
- ⁹ R. Fairman & C. Yapp, 'Enforced Self-Regulation, Prescription, and Conceptions of Compliance within Small Businesses: The Impact of Enforcement' (2005) 27(4) *Law and Policy*, pp. 491–519, at 493.

Reflexive law theory is based on a critique of command-and-control, technology- and performance-based instruments, claiming that they are ineffective and not legitimate in governing complex societal challenges, such as sustainability.¹⁰ The conceptual starting point that categorizes certain regulatory instruments as reflexive while discounting others has been maintained in later theories of reflexive environmental law (REL)¹¹ and reflexive regulation.¹² The same goes for other new governance theories, such as regulatory governance¹³ and smart regulation,¹⁴ which do not differentiate between traditional types of regulation but label all technology- and performance-based instruments as rigid and non-participatory.

We argue that this starting point needs to be revisited. So-called reflexive forms of regulation (such as self-regulation, disclosure- and procedure-based instruments) have proven to be just as susceptible to market capture and ossification as traditional regulation.¹⁵ Moreover, as today's sustainability crises become increasingly dire, critique of softer forms of law (one indicator of reflexive law)¹⁶ to govern these challenges is increasing, as is exemplified by the Paris Agreement.¹⁷ At the same time, there is renewed interest in so-called non-reflexive, traditional command-and-control instruments to regulate sustainability, both academically¹⁸ and in practice. For instance, the EU has numerous traditional regulatory approaches on the horizon, for such issues as product durability, 'green claims', and greenhouse gas emissions.¹⁹ We hypothesize that traditional regulation may also be designed and applied to include

¹⁰ G. Teubner, 'Substantive and Reflexive Elements in Modern Law' (1983) 17(2) *Law & Society Review*, pp. 239–85.

¹¹ E.W. Orts, 'Reflexive Environmental Law' (1995) 89(4) *Northwestern University Law Review*, pp. 1227–340.

¹² M. Aalders & T. Wilthagen, 'Moving Beyond Command-and-Control: Reflexivity in the Regulation of Occupational Safety and Health and the Environment' (1997) 19(4) *Law and Policy*, pp. 415–43.

¹³ O. Lobel, 'New Governance as Regulatory Governance', in D. Levi-Faur (ed.), *The Oxford Handbook of Governance* (Oxford University Press, 2012), pp. 65–82, at 71–2.

¹⁴ N. Gunningham & D. Sinclair, 'Smart Regulation', in P. Drahos (ed.), *Regulatory Theory* (ANU Press, 2017), pp. 133–48, at 134.

¹⁵ See, e.g., T. Hickmann, 'Private Authority in Global Climate Governance: The Case of the Clean Development Mechanism' (2013) 5(1) *Climate and Development*, pp. 46–54; M. Isailovic & P. Pattberg, 'Private Governance', in C. Ansell & J. Torfing (eds), *Handbook on Theories of Governance* (Edward Elgar, 2016), pp. 468–76; L. Vigneau & C.A. Adams, 'The Failure of Transparency as Self-Regulation' (2023) 14(4) *Sustainability Accounting, Management and Policy Journal*, pp. 852–76.

¹⁶ Reflexive law is not exclusively soft law as reflexive instruments can be command-and-control enforced, but notably reflexive law 'softens law's substantive rigor': S.E. Gaines, 'Reflexive Law as a Legal Paradigm for Sustainable Development' (2002) 10(1) *Buffalo Environmental Law Journal*, pp. 1–24, at 3.

¹⁷ Paris (France), 12 Dec. 2015, in force 4 Nov. 2016, available at: http://unfccc.int/paris_agreement/items/9485.php. See also P. Lawrence & D. Wong, 'Soft Law in the Paris Climate Agreement: Strength or Weakness?' (2017) 26(3) *Review of European, Comparative & International Environmental Law*, pp. 276–86.

¹⁸ See text and sources at n. 6 above. These recent studies help to demonstrate the increasing focus on legislation which utilizes traditional regulatory instruments in governing complex sustainability challenges.

¹⁹ European Parliament, 'Parliament Backs New Rules for Sustainable, Durable Products and No Greenwashing', *European Parliament*, 11 May 2023, available at: <https://www.europarl.europa.eu/news/en/press-room/20230505IPR85011/parliament-backs-new-rules-for-sustainable-durable-products-and-no-greenwashing>; European Parliament, 'Fit for 5.5: Deal on Stricter Rules for Member States'

certain reflexive law functionalities. However, we also recognize that the effectiveness of both traditional and reflexive approaches in steering companies towards sustainability have been questioned in the light of the continued sustainability crises.

To address both these questions, we develop a new taxonomy for REL theory, which centres on understanding the drivers of company reflexivity.²⁰ Reflexivity is defined as the process where a regulated actor self-critically reflects on its performance and then self-organizes to make (non-)improvements to that performance based on the reflection.²¹ Importantly, this goes beyond incremental learning and changes to technological practices and processes, and also concerns more transformative changes to functions, goals or values behind decision making and behaviour.²²

As regulated companies play a crucial role in addressing complex sustainability challenges, understanding not only *how* they participate, but *what* their object and depth of learning is while they participate, is a crucial steering tool at the disposal of regulators. Better understanding of the regulatory drivers of reflexivity allows for regulations to better steer companies towards more transformative reflexive responses. As such, an enriched REL framework has great potential for understanding fundamental issues of effectiveness in resolving complex sustainability challenges.

For this potential to be realized, the foundations of REL and reflexive law theories must be revisited to capture what it is precisely in law that has potential to drive corporate reflexivity. Through a critical review of REL literature, the taxonomy presented in this article refines the definition of REL by centring on the legal drivers of regulatee reflexivity.²³ This refining is essential for the future of REL by improving accuracy in recognizing how any instrument drives reflexivity in regulated actors (understanding the potential of REL), and empowering regulators to effectively integrate or avoid certain REL elements according to context (understanding the possibilities of REL). Lastly, we consider the framework a starting point for future empirical studies of REL to test whether regulatee reflexivity has occurred in practice.

Greenhouse Gas Emissions', 8 Nov. 2022, available at: <https://www.europarl.europa.eu/news/en/press-room/20221107IPR49205/fit-for-55-deal-on-stricter-rules-for-member-states-greenhouse-gas-emissions>.

²⁰ Teubner's reflexive law theory makes the distinction between internal legal reflexivity by the legal system itself and external reflexivity by wider society (e.g., regulated actors). The two are linked (e.g., the disclosure-based approaches used to drive reflexivity externally among wider society also feeds into legal system reflexivity); however, we follow Orts' REL theory and focus on the external element specific to regulated private entities. See Teubner, n. 10 above, p. 255; Orts, n. 11 above.

²¹ J. Pickering, 'Ecological Reflexivity: Characterising an Elusive Virtue for Governance in the Anthropocene' (2018) 28(7) *Environmental Politics*, pp. 1145–66, at 1151–3; J.S. Dryzek, 'Institutions for the Anthropocene: Governance in a Changing Earth System' (2016) 46(4) *British Journal of Political Science*, pp. 937–56; Orts, n. 11 above, pp. 1254, 1290.

²² Pickering, *ibid*.

²³ By 'drivers' we refer to institutional mechanisms that build the appropriate context to allow for improvements (e.g., reflexivity) in another organization. We consider drivers as distinct from 'enablers' and 'motivations', which also contribute to organizational reflexivity. Enablers are the variables that condition, facilitate or hinder the effects between the drivers and the improvement outcomes. For the distinction between drivers and enablers see M. Kaye & R. Anderson, 'Continuous Improvement: The Ten Essential Criteria' (1999) 16(5) *International Journal of Quality & Reliability Management*, pp. 485–509. We consider motivations to be the 'expectations or pursued goals' that an organization has; see J. González-Benito & Ó. González-Benito, 'A Study of the Motivations for the Environmental Transformation of Companies' (2005) 34(5) *Industrial Marketing Management*, pp. 462–75, at 466.

Whether a REL approach is always needed, or desirable, depends on various contextual factors.²⁴ Our proposed taxonomy acts as a starting point for enhancing the application of REL through providing a more nuanced definition of REL to enhance its scope and usability.²⁵ This would also enrich socio-legal and governance scholarship, where research has traditionally focused on the reflexive capacities of economic and state actors, or reflexivity as a process rather than the (legal) drivers of organizational reflexivity.²⁶

In terms of the methodology underpinning this article, the framework was developed iteratively by reviewing literature on REL, building a conceptual framework, and then testing and adapting the framework through exploring the concepts in EU directives – a recognized form of transnational law.²⁷ The majority of examples we present come from three EU directives: the Waste Framework Directive (WFD),²⁸ the Single-Use Plastics Directive (SUPD),²⁹ and the aforementioned EIA Directive,³⁰ as well as the national transpositions of these directives by France.³¹

The structure of this article is as follows. Section 2 presents a critical review of distinctions in REL literature regarding regulatory instruments having either formal, substantive, or reflexive legal rationalities. Based on this, in Section 3 we present our refined taxonomy for REL, which comprises three overarching drivers of reflexivity – autonomy, accountability and adjustability – and eleven REL techniques which have a higher, medium, or lower degree of potential to drive company reflexivity. This includes examples of the REL techniques in the aforementioned EU legislation. In Section 4 we use the framework to highlight which of the six core types of regulatory instrument mentioned in REL literature (self-regulation-based, disclosure-based,

²⁴ F. Saurwein, 'Regulatory Choice for Alternative Modes of Regulation: How Context Matters' (2011) 33(3) *Law and Policy*, pp. 334–66.

²⁵ The authors of this article have two forthcoming publications that further do this by testing this framework through an empirical methodology: V. Ross et al., 'Reflexive EU Environmental Law: Divergence in the French and German Transposition of the Single-Use Plastics Directive' (manuscript submitted for publication); and V. Ross & J. van Leeuwen, 'Reducing the Tide of Single-Use Plastic Pollution: How the EU's Single Use Plastic Directive Does (Not) Drive Private Company Reflexivity' (manuscript submitted for publication).

²⁶ Pickering, n. 21 above; G. Lynch-Wood & D. Williamson, 'The Receptive Capacity of Firms: Why Differences Matter' (2011) 23(3) *Journal of Environmental Law*, pp. 383–413; N. Kamil, S.R. Bush & A. Gupta, 'Does Climate Transparency Enhance the Reflexive Capacity of State Actors to Improve Mitigation Performance? The Case of Indonesia' (2021) 9 *Earth System Governance*, article 100111.

²⁷ M. Maduro, K. Tuori & S. Sankari (eds), *Transnational Law: Rethinking European Law and Legal Thinking* (Cambridge University Press, 2014).

²⁸ Directive 2008/98/EC on Waste and Repealing Certain Directives [2008] OJ L 312/3 (WFD).

²⁹ Directive (EU) 2019/904 on the Reduction of the Impact of Certain Plastic Products on the Environment [2019] OJ L 155/1 (SUPD).

³⁰ EIA Directive, n. 8 above.

³¹ Our framework focuses on the effect of law on companies' actions; however, EU directives do not have direct effect, meaning they do not apply directly to private companies but must be transposed into national law to give discretion to Member States on how they are to be implemented. As such, there were certain cases where a directive did not provide the detail required to identify our theoretical concepts. In these cases, we also reviewed transpositions by France. France was chosen as an example because of the authors' familiarity with its legislation. See Art. 284 of the Treaty on the Functioning of the European Union, Lisbon (Portugal), 13 Dec. 2007, in force 1 Dec. 2009 [2012] OJ C 326/47, available at: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2012:326:FULL:EN:PDF>.

procedure-based, market-based, performance-based, and technology-based) are inherently REL by nature for having one or more of the REL techniques ‘embedded’ within them. Section 5 concludes the article by discussing the significance of this framework in enabling understanding of the *potential* of a regulatory instrument to drive company reflexivity by its nature, and the various *possibilities* for REL techniques to be considered at the design stage to encourage reflexive responses in different contexts.

2. Revisiting Formal, Substantive or Reflexive Rationalities

According to reflexive law, the precursor to REL, there are three evolutionary stages of law: formally and substantively rational law put forward by traditional legal philosophers, such as Weber,³² and reflexively rational law set out by Teubner.³³ Following this, Orts used the distinction between these three rationalities to define what reflexive law is by highlighting various shortcomings in the first two that hinder regulatee reflexivity³⁴ and explore how certain regulatory instruments utilized by public institutions fit into these three categories.³⁵ Below we present these definitions of formally, substantively, and reflexively rational regulatory instruments by Orts, highlighting inconsistencies in this thinking by showing how each regulatory instrument has shortcomings and strengths in driving reflexivity according to the very definitions provided in reflexive law literature. By examining these points, we begin to reveal the precise elements of REL within different regulatory instruments that build potential for regulatee learning and self-organization to address complex sustainability challenges.

2.1. Formally Rational Law

According to Weber’s distinctions, the first stage of law utilized a ‘formal legal rationality’ by ‘establishing basic rules by which private parties orient their affairs and resolve disputes’.³⁶ This type of free-market law focuses less on detail and more on general rules around which private actors (re)orientate themselves, such as general rules governing the allocation of property rights or contractual relationships.

Orts highlights how the autonomy allotted to private actors through certain regulatory instruments is indicative of formally rational law.³⁷ For Orts, legal structures for regulatee autonomy are useful in the regulation of complex sustainability challenges by placing less reliance on the legal system’s limited knowledge, power, and resources, and focusing more on company self-learning and improvements.³⁸ This is based on

³² M. Weber, *The Methodology of the Social Sciences* (translated by E. Shils & H.A. Finch, Free Press, 1949), pp. 91–112.

³³ Teubner, n. 10 above.

³⁴ Orts, n. 11 above, pp. 1252–68; for the overall aim of REL as driving regulatee reflexivity see p. 1268.

³⁵ *Ibid.*, pp. 1252–4.

³⁶ Teubner, n. 10 above, pp. 282–3; Orts, n. 11 above, p. 1255.

³⁷ We emphasize that Orts does not claim that these instruments are examples of formal law but, rather, that they ‘roughly correspond’ to the formal evolutionary stage of the law for reasons we elaborate in this section: Orts n. 11 above, p. 1254.

³⁸ *Ibid.*; Orts makes various references to these limitations: *ibid.*, pp. 1241, 1258–9, 1262.

earlier reflexive law thinking, which recognized that legal system limitations – including its knowledge, ability to exert control, and ability to gather and process information – are inevitable as a result of the ‘semi-autonomous’ nature of social subsystems.³⁹ As such, reflexive law strives for ‘regulated autonomy’, whereby the regulator gives a degree of autonomy to regulatees so that it can tap into local knowledge and additional resources to address sustainability more effectively.⁴⁰ Examples of instruments highlighted by Orts that are indicative of Weber’s formal law include pollution taxes or pollution trading schemes.⁴¹ Such instruments push companies to compare the costs of pollution abatement with the costs of continuing with the status quo, but the specific method of abating pollution is left to the company in the light of social, environmental, or technical advancements.⁴²

Nonetheless, the degree of autonomy given to private companies by formally rational law creates a strong risk of market capture. This is because the values and motivations of market actors as regulators is questionable (for example, prioritizing profit only), and means that reflexivity for social goals (for example, sustainability) is not a given.⁴³ In particular, pollution trading systems may result in design flaws that induce market distortion, such as monopolization by powerful companies.⁴⁴ Most importantly, however, these regulatory instruments still rely on the limited capacity of the legal system to decide on any peripheral rules set (for example, type of self-regulation proposed or economic rules set). Orts himself highlights the difficulty in knowing the ‘right’ price for pollution or the number of tradeable pollution permits,⁴⁵ which is variable, case-specific, and requires adjustability and knowledge from on-the-ground actors.

2.2. Substantively Rational Law

Substantively rational law is law that is characteristic of the regulatory state which dominated when Teubner first wrote about reflexive law in the late 1980s and, for the most part, still dominates today. Such laws are detailed, heavy-handed regulation, focusing on the substance of the regulated issue. Examples in the environmental field are command-and-control rules that prescribe either performance-based

³⁹ Teubner’s view of ‘semi-autonomous subsystems’ comes from Luhmann’s theory of autopoiesis, which perceives society as a network of interconnected subsystems, such as the legal system, politics, religion, and the market economy. Though connected, each subsystem retains a degree of autonomy by having its own logic, discourses, values, and internal processes of learning and communication: N. Luhmann, *Social Systems* (translated by J. Bednarz Jr & D. Baecker, Stanford University Press, 1996); Teubner n. 10 above, pp. 246, 277.

⁴⁰ Teubner, n. 10 above, pp. 254–5; Orts, n. 11 above, p. 1260.

⁴¹ Orts, n. 11 above, p. 1272.

⁴² *Ibid.*, p. 1245.

⁴³ L. Breunung & J. Nocke, ‘Environmental Officers: A Viable Concept for Ecological Management?’, in Teubner, Farmer & Murphy, n. 2 above, pp. 267–95.

⁴⁴ C. Flachsland et al., ‘How to Avoid History Repeating Itself: The Case for an EU Emissions Trading System (EU ETS) Price Floor Revisited’ (2020) 20(1) *Climate Policy*, pp. 133–42; N. Boucquey, ‘Hot Spots in the Bubble: Ecological Liability in Markets for Pollution Rights’, in Teubner, Farmer & Murphy, n. 2 above, pp. 49–74, at 58.

⁴⁵ Orts, n. 11 above, pp. 1268–71.

benchmarks/standards for polluters, commonly issued through permits to pollute, or uniform technology-based benchmarks for certain activities, for example, requiring catalyst converters on machinery or air pollution filters on smokestacks.⁴⁶

Despite recognition of their need in certain circumstances,⁴⁷ substantively rational laws are considered a particularly poor match for driving company reflexivity. Firstly, substantively rational laws require a high level of intervention by the state and regulatory agencies in (re)formulating the substantive details in the law and monitoring of compliance. This is argued to be economically inefficient because of the aforementioned limitations of the legal system and minimal autonomy given to non-state actors to integrate their knowledge and build legitimacy in the regulatory approach.⁴⁸ Secondly, it is claimed that these laws are both too specific and too broad, as their detailed nature does not account for differences in local circumstances and, at the same time, increases the amount of space for regulated actors to find loopholes.⁴⁹ Thirdly, from the standpoint of evolutionary theory,⁵⁰ substantively rational instruments are deemed inadequate because of the continuous evolution of society and the natural environment, driving the continuous change in knowledge, norms, values, and so on.⁵¹ For Orts, substantive law instruments prescribe detailed performance- and technology-based standards, which can be updated only via traditional legislative channels; such channels are commonly critiqued as slow and rigid.⁵² Such standards are not prescribed in formally rational law instruments, which grants regulatees flexibility in choosing the best option for any given place or space in time.

Performance- and technology-based instruments are considered to have most potential to stunt company reflexivity and innovation. However, hints of more appropriate types of substantively rational law that do affect company reflexivity for sustainability have been highlighted by Hirsch. The first is through the best available technique (BAT) standard, whereby the regulator sets a performance-benchmark and may propose the BAT but allows companies to choose how they meet the benchmark.⁵³ Here we see an example of some autonomy and adjustability being prescribed for the regulated actor in a performance-based instrument. Secondly, in the case of hazardous

⁴⁶ Ibid., p. 1235.

⁴⁷ E.W. Orts, 'A Reflexive Model of Environmental Regulation' (1995) 5(4) *Business Ethics Quarterly*, pp. 779–94, at 783.

⁴⁸ Ibid., pp. 781–2; Orts, n. 11 above, p. 1241. Orts also highlights that the motivations of regulatory agencies to properly enforce instruments can vary and are susceptible to political forces, including politicians and private companies: *ibid.*, pp. 1237–8.

⁴⁹ Teubner, n. 10 above, p. 240; Orts, n. 11 above, p. 1241.

⁵⁰ This evolutionary perspective is an old tradition in the sociology of law. According to Luhmann, society and all its complexities are in continuous state of flux precisely because of the continuously evolving environment it sits within: N. Luhmann, 'Evolution und Geschichte', in N. Luhmann (ed.), *Soziologische Aufklärung 2* (VS Verlag für Sozialwissenschaften, 1975), pp. 150–69; N. Luhmann, 'Evolution des Rechts', *Rechtstheorie*, vol 1 (1970); P. Nonet & P. Selznick, *Law and Society in Transition: Towards Responsive Law* (Harper and Row, 1978); Teubner, n. 10 above, p. 241.

⁵¹ P. Capps & H.P. Olsen, 'Legal Autonomy and Reflexive Rationality in Complex Societies' (2002) 11(4) *Social & Legal Studies*, pp. 547–68, at 559.

⁵² Orts, n. 47 above, pp. 781–2; Orts, n. 11 above, pp. 1252–68.

⁵³ D.D. Hirsch, 'Green Business and the Importance of Reflexive Law: What Michael Porter Didn't Say' (2010) 62(4) *Administrative Law Review*, pp. 1063–126, at 1094.

waste disposal, exceptionally high standards on end-of-pipe compliance technologies motivated upstream innovation whereby companies took themselves ‘outside the scope of the regulatory scheme’.⁵⁴ Thirdly, the threat of regulation has been known to create ‘anticipatory compliance’ and stimulate self-organization in companies.⁵⁵ Hirsch explains that this has been particularly effective among companies in upgrading or building new facilities as they over-comply to avoid expensive retrofits in the future.⁵⁶

2.3. Reflexively Rational Law

Reflexively rational law is less detailed and direct than substantively rational law, but it goes beyond the general rules of formally rational law. Regulatory instruments in this category aim to build ‘democratic structures and procedures in companies in order to strengthen business’ learning capacity and reflexive processes’.⁵⁷

One way in which this is done is by focusing regulation on procedures for self-assessment rather than the substance of the regulated issue. Such procedures force companies to assess their own performance against certain goals (such as sustainability), but give them autonomy to decide for themselves the improvements to match those goals.⁵⁸ A recent example is the EIA Directive, which is command-and-control enforced and requires companies to undertake procedures of self-assessment and reporting of environmental performance against a benchmark.⁵⁹ Like formally rational law, companies decide on the improvements rather than rely on the state to set these *ex ante*. Moreover, the performance benchmarks are also not prescribed in the legislation but are determined *ex post*, case by case. For instance, Article 4(4) of the EIA Directive states that ‘the developer shall provide information on the characteristics of the project and its *likely significant effects* on the environment’.⁶⁰ This outsourcing avoids reliance on the aforementioned (limited) legal system knowledge, and is an avenue for more democratic formulation of regulation because companies and third parties can be involved in prescribing these benchmarks and other substantive details of the regulatory instrument. Moreover, procedure-based instruments do not rely on traditional, formal legal processes to be updated, so they can be adjusted more easily in line with the evolving needs of society and the environment.⁶¹

The aforementioned ‘democratic structures’ are not limited to companies, but aim to enlist wider society in the act of regulation to affect company reflexivity. Here ‘wider society’ refers to citizens, civil society, or other market actors who might put pressure on regulated companies. According to earlier reflexive law thinking, this rationality to involve other stakeholders enhances the legitimacy of the legal approach and stimulates

⁵⁴ Ibid., p. 1096.

⁵⁵ Ibid., pp. 1083–4

⁵⁶ Ibid.

⁵⁷ Aalders & Wilthagen, n. 12 above, p. 432.

⁵⁸ Orts, n. 11 above, pp. 1254, 1290.

⁵⁹ EIA Directive, n. 8 above.

⁶⁰ Ibid. (emphasis added to show the use of a vague benchmark that is not prescribed and, therefore, adjusts externally to the formal legal system).

⁶¹ The evolutionary perspective is explained in Section 2.2; see n. 50 above.

reflexivity by forcing regulated companies to incorporate more diverse values into their decision making, such as social or environmental values.⁶² Orts highlights how obligations for regulated actors to publicly disclose information exposes company actions and decision making to wider society to reduce state administration and make companies become ‘environmentally responsible’.⁶³ For Orts, the EU Eco-Management and Audit Scheme (EMAS)⁶⁴ is an example of an instrument with ‘disclosure at its heart’⁶⁵ through its obligations that push companies to ‘collect and disseminate information about their environmental performance’,⁶⁶ as well as the requirements for such information to be audited by a third party.⁶⁷

However, disclosure-based instruments alone do not guarantee sustainability improvements. Their effectiveness in driving reflexivity depends on the extent to which the receivers of information are environmentally conscious⁶⁸ and capable of reacting to the information, such as by not investing in or purchasing from non-sustainable companies. Power also asserts that, though disclosure is crucial for any reflexive legal approach, they ‘always run the risk of being ineffective (decoupled), over-imperialistic (colonizing) or captured (colonized) in particular organizational settings’.⁶⁹

REL departs from the assumption that regulation with a reflexive rationality builds greater potential for regulatee reflexivity to address sustainability than formally and substantively rational regulation. However, all three rationalities have the potential for shortcomings and strengths in this respect. Therefore, to revisit this defining assumption in REL and improve REL assessments of any type of regulatory instrument, including instruments characteristic of formal or substantively rational law, the following section presents a refined taxonomy framework based on the theoretical underpinnings of reflexive law theory.

3. Framework of Reflexive Drivers and REL Techniques

The framework for REL presented in this section assumes that any regulatory instrument can build potential or create possibilities for regulatee reflexivity, and to

⁶² This is based on Habermas’ theories of communication and democratic legitimacy, which argue that the involvement of wider society (i.e., non-public, non-private actors) builds legitimacy by resolving value disparities between subsystems which are a result of their autonomous nature: J. Habermas, *Theorie des Kommunikativen Handelns* (Suhrkamp, 1981); J. Habermas, *Communication and the Evolution of Society* (trans. T. McCarthy, Beacon, 1979), pp. 95–129; Orts, n. 11 above, pp. 1254, 1258; L. Farmer & G. Teubner, ‘Ecological Self-Organization’, in Teubner, Farmer & Murphy, n. 2 above, pp. 3–13, at 4.

⁶³ Orts, n. 11 above, p. 1312.

⁶⁴ Regulation (EU) No. 1221/2009 on the Voluntary Participation by Organisations in a Community Eco-Management and Audit Scheme (EMAS), Repealing Regulation (EU) No. 761/2001 and Commission Decisions 2001/681/EC and 2006/193/EC [2009] OJ L 342/1.

⁶⁵ Orts, n. 11 above, p. 1306.

⁶⁶ Hirsch, n. 53 above, p. 1112.

⁶⁷ Orts, n. 47 above, p. 787. Additional examples of third-party verification as a reflexive driver can be seen in the ISO 14001 standards for sustainability; see Gaines, n. 16 above, p. 11.

⁶⁸ Orts, n. 47 above, p. 785.

⁶⁹ M. Power, ‘Constructing the Responsible Organisation: Accounting and Environmental Representation’, in Teubner, Farmer & Murphy, n. 2 above, pp. 369–92, at 375–6.

varying degrees. Such reflexivity is desirable to address complex sustainability challenges. This section presents a refined taxonomy framework to define REL. Such a framework is an important analytical tool for regulators and academics to understand not only the potential of legislation to drive reflexivity, but also how to tweak specific regulatory instruments within legislation to drive more reflexive responses and better address sustainability issues.

The framework comprises three overarching reflexive drivers – autonomy, accountability, and adjustability – and, under these, eleven REL techniques (three to five techniques per driver).⁷⁰ Each driver connects to broader theoretical ideas underpinning REL theory, which were introduced in the previous section. The REL techniques can be tangibly identified and used within regulatory instruments in legislation, and are derived from the elements of formally, substantively, and reflexively rational regulation described above in Section 2. Below we explain (i) which techniques sit within each driver; (ii) how each technique has either a lower, medium, or higher degree of potential to drive reflexivity in regulated companies for sustainability; and (iii) how these techniques can be tangibly identified in legislation. This is not an exhaustive list of REL techniques, but rather act as a starting point for the improved identification and assessment of the potential of REL to drive regulatee reflexivity in any legislative act.

3.1. Autonomy

As explained in Section 2, Orts highlights how formal law gives autonomy to the market, and that certain regulatory instruments also do this, whereby regulated actors are given some freedom to self-organize and learn.⁷¹ For Teubner, the external function of reflexive law is to create structures that support social autonomy, or ‘regulated autonomy’.⁷² Thus, it is not full autonomy that is expected or targeted, but a degree of autonomy. Through this driver, social learning is stimulated to enhance the legitimacy and effectiveness of social regulation by allowing the incorporation of local actor knowledge and resources into the regulatory approach.⁷³

Based on a review of the reflexive law literature, Table 1 highlights three techniques for the driver autonomy: (i) explicit options, (ii) autonomous choice, and (iii) participation in (re)formulation. These are elaborated below, with legislative examples from the EU WFD⁷⁴ and the French Environmental Code.⁷⁵

⁷⁰ Conceptually, we call the drivers ‘reflexive’ and the techniques ‘REL’ as the drivers are a broader means for one social institution to drive reflexivity in another; therefore, they are usable beyond a purely legal discipline. Alternatively, the techniques focus specifically on elements of public regulation, which build potential for regulatee reflexivity.

⁷¹ Orts, n. 11 above, p. 1265–6.

⁷² Teubner, n. 10 above, pp. 254–5.

⁷³ G. Teubner, ‘Social Order from Legislative Noise? Autopoietic Closure as a Problem for Legal Regulation’, in G. Teubner & A. Febraro (eds), *State, Law, and Economy as Autopoietic Systems: Regulation and Autonomy in a New Perspective* (Giuffrè, 1992) pp. 618–22.

⁷⁴ WFD, n. 28 above.

⁷⁵ Code de l’environnement [Environmental Code], *Journal Officiel de la République Française* [Official Gazette of France], 2 Dec. 2022.

Table 1 Potential of REL Techniques for Driving Private Company Reflexivity for Sustainability

Potential to drive reflexivity for sustainability	Reflexive environmental law (REL) techniques for each reflexive driver		
	AUTONOMY	ACCOUNTABILITY	ADJUSTABILITY
Higher	Participation in (re)formulation of substantive details	Third-party participation in (re)formulation of substantive details	External adjustments to substantive details
Medium	Autonomous choice of sustainability improvements	Third-party verification on decision making or performance	Public disclosure on decision making or performance Threat of regulation on regulated issue
Lower	Explicit options on substantive details	Self-monitoring and reporting on decision making or performance Awareness raising on regulated issue	Scheduled adjustments to substantive details

Note * Based on the literature review, higher, medium and lower levels are designated according to the potential of the REL technique to drive reflexivity in regulated companies regarding their sustainability performance. More potential makes for a higher level.

The autonomy technique with lower potential to drive company reflexivity for sustainability is explicit options, which builds flexibility into the regulatory approach by giving regulated actors a choice between two or more options.⁷⁶ An example is Article L541-15-10 (III) of the French Environmental Code, which allows for regulated actors to make a choice between offering reusable or recyclable containers when serving food, based on the actor’s business model and needs. The autonomy allotted to companies to choose between two options creates potential for the law’s outcome to be more variable and case-specific.⁷⁷ However, as the options are still formulated by the regulator, companies’ responses are locked into the prescribed options, which is why it is lower on the spectrum.⁷⁸

Next, the medium-level technique – autonomous choice – is identified by vague terminology on the specific technical requirements required by regulatees prescribed in the law.⁷⁹ This gives freedom for companies to choose the sustainability improvements that best suit their context, or even to come up with new innovations in terms of procedures or technologies.⁸⁰ As well as identified through vague terminology, this technique can be deduced by the absence of specific technical benchmarks, such as through market-based instruments.⁸¹ An example of this can be seen in Article L.541-10-12 of the French Environmental Code, which requires a

⁷⁶ A. Koukiadaki, ‘Reflexive Law and the Reformulation of EC-Level Employee Consultation Norms in the British Systems of Labour Law and Industrial Relations’ (2009) 5(4) *International Journal of Law in Context*, pp. 393–416, at 395.

⁷⁷ Choice is seen as a reflexive feature of some market-based instruments; see Orts, n. 11 above, p. 1269.

⁷⁸ G. Teubner, *Law as an Autopoietic System* (Blackwell, 1993), pp. 93–5.

⁷⁹ L.B. Edelman, ‘Legal Ambiguity and Symbolic Structures: Organizational Mediation of Civil Rights Law’ (1992) 97(6) *American Journal of Sociology*, pp. 1531–76.

⁸⁰ Orts, n. 11 above, p. 1267.

⁸¹ *Ibid.*, p. 1271.

‘five-year waste-prevention and improvement plan to be submitted by producers individually or collectively’ but, notably, leaves the choice of sustainability improvements to the regulated company.

Lastly, the autonomy technique with the highest potential to drive company reflexivity for sustainability is participation in the (re)formulation of substantive details of the law through the involvement of companies in decision making on such regulatory elements as benchmarks or implementation procedures. This participation in the (re)formulation technique is embedded in self- or private regulation, as such regulation is developed by private actors themselves. The technique has a higher potential to promote reflexivity because it fosters collective self-organization of companies to decide the best means to achieve broader legislative aims.⁸² According to reflexive law, this participation fosters reflexivity through knowledge exchange or even companies out-competing each other.⁸³

An example of such participation can be identified in the EU WFD, where Article 8a.4(c) on extended producer responsibility (EPR) states that ‘costs shall be established in a transparent way between the actors concerned’. This example involves regulated companies in decision making on the economic benchmarks in the instrument. Though important, this higher degree of autonomy runs the risk of market capture and a lack of reflexivity, which could stagnate sustainability improvements.⁸⁴ To resolve this, participation in (re)formulation can be paired with an accountability technique (more on this in Section 3.2).

3.2. Accountability

The second driver – accountability – also addresses the limitations of the legal system by exposing decision making and activities of regulated actors to the wider society, including citizens and civil society. For Teubner, the purpose of opening up decision making is not to increase individual participation and neutralize power structures but to drive ‘the internal reflexion of social identity’.⁸⁵ In other words, the increased participation of broader societal actors in legal processes serves to enhance regulatee reflexivity.

Accountability techniques are elements in legislation that enlist civil society or the public to act as intermediaries between the market and the state.⁸⁶ Such techniques build structures for ‘discursive decision processes, and consensus orientated procedures of negotiation and decision’ between regulated actors and stakeholders.⁸⁷ According to REL thinking, this has an impact on company reflexivity for sustainability by putting

⁸² Teubner, n. 10 above, pp. 251, 272–9.

⁸³ Ibid., p. 251; S. Deakin, ‘Two Types of Regulatory Competition: Competitive Federalism versus Reflexive Harmonisation: A Law and Economics Perspective on Centros’ (1999) 2 *Cambridge Yearbook of European Legal Studies*, pp. 231–60, at 245.

⁸⁴ J.P. Voß & B. Bornemann, ‘The Politics of Reflexive Governance: Challenges for Designing Adaptive Management and Transition Management’ (2011) 16(2) *Ecology and Society*, article 9, p. 12.

⁸⁵ Teubner, n. 10 above, p. 273.

⁸⁶ Ibid., pp. 273–5; Orts, n. 11 above, p. 1254.

⁸⁷ Habermas (1981), n. 62 above, p. 554.

pressure on companies to enhance the accuracy of disclosed information and through the incorporation of more diverse values into company decision making.⁸⁸ Within the REL literature, common characteristics that involve stakeholders in the act of regulation to drive company reflexivity for sustainability are presented as five accountability techniques in [Table 1](#). Such techniques build accountability on (a) company compliance with legislative requirements, (b) the individual actions of companies, or (c) collective participation in the (re)formulation of substantive details by companies. These techniques for accountability are exemplified below with examples from the EU WFD.⁸⁹

Lower-level techniques for accountability are awareness raising, self-monitoring and reporting. Awareness raising is defined as requirements in legislation for market or state actors to raise awareness of legislated issues among citizens and civil society; an example is found in Article 9(m) WFD, which requires Member States to ‘develop and support information campaigns to raise awareness about waste prevention and littering’. This technique affects reflexivity by building anticipation in companies for long-term changes in public concern for a sustainability issue, thus incentivizing regulated companies to reflect on the long-term viability of their existing practices. Moreover, awareness raising also makes public disclosure (medium-level accountability technique) more effective by increasing the environmental consciousness of the recipients of information.⁹⁰ However, as companies are not guaranteed to reflect or take action in the light of self-monitoring activities, this technique has the least potential for reflexivity.

The next lower-level technique is self-monitoring and reporting, defined as self-auditing by companies and reporting to the state. For instance, Article 8a(c) WFD on EPR requires that ‘a reporting system is in place to gather data on the products placed on the market ... by the producers’. This technique is a precursor to medium- and higher-level techniques for accountability as there can be no public disclosure of information without self-monitoring. However, used alone, this technique has limited reflexive potential as it may simply become a tick-box exercise. This means there is less pressure on companies to reflexively improve reported information or their sustainability strategy.

Next are the two medium-level techniques: public disclosure and third-party verification of information. According to the literature, they are key techniques that reflexively rational laws (namely, procedure- and disclosure-based laws) use to build accountability while reducing state monitoring.⁹¹ These two techniques are placed next to each other (rather than one on top of the other) in [Table 1](#), as they both have benefits and negatives with regard to driving reflexivity, and their potential depends on their suitability to the context of an issue. An example of public disclosure is found in Article 8a.3(e) WFD on EPR, whereby information on ‘ownership and membership ... [and] the financial contributions paid’ must be made publicly available.

⁸⁸ Farmer & Teubner, n. 62 above, p. 4.

⁸⁹ WFD, n. 28 above.

⁹⁰ Orts, n. 47 above, p. 785.

⁹¹ Hirsch, n. 53 above, pp. 1121–2; Orts, n. 11 above, pp. 1322–3.

According to REL, public disclosure has the potential to open companies up to public scrutiny, and therefore increase pressure to be reflexive.⁹² However, a company or industry that is not in the public eye is less susceptible to this scrutiny, reducing the potential of this technique to drive reflexivity.⁹³ Meanwhile, third-party verification can be found in Article 8a.3(d) WFD, which requires ‘regular independent audits’ to appraise the financial management of the EPR system. This technique guarantees that reported information is checked and feedback is provided to the company, which in turn lightens the regulator’s compliance burden⁹⁴ and is useful in scenarios where companies are less willing to disclose information publicly. However, requirements for accredited verifiers place expensive burdens on small- and medium-sized entities, which may hinder reflexivity.⁹⁵ Moreover, verifiers work for both the market and state, making them susceptible to bias or capture, which could affect company reflexivity.

Lastly, third-party participation in substantive details (such as benchmarks or implementation) is considered a higher technique because it is crucial for building accountability on any decision making in which companies are involved. It relates to the higher-level autonomy technique: participation in (re)formulation. In essence, if companies are involved in decision making on regulatory details, so too should other non-state actors. Such third-party participation might include involving citizens or civil society actors in decision-making processes.⁹⁶ This participation is key because it drives companies to consider the values of third parties in decision making, preventing market capture, and boosting mutual learning and positive competition to build potential for reflexivity.⁹⁷ A tangible example in legislation is Article 8a.4(c) WFD, which requires costs for the new EPR system to be established ‘between the actors concerned’, including public, private, and civil entities.

3.3. Adjustability

The last driver concerns how legislative flexibility affects companies’ anticipation for change as a driver of reflexivity. REL takes an evolutionary perspective,⁹⁸ and adjustability in the law seeks to stimulate reflexive self-organization by regulated entities by building anticipation in them for future regulatory adjustments. This is intended to deter companies from continuing with the status quo, and to encourage reflexivity and self-organization to improve their performance.⁹⁹

⁹² Orts, n. 11 above, pp. 1241–46; R.B. Stewart, ‘A New Generation of Environmental Regulation’ (2001) 29(1) *Capital University Law Review*, pp. 21–182, at 132.

⁹³ Saurwein, n. 24 above, pp. 342–3.

⁹⁴ Orts, n. 11 above, pp. 1306–9.

⁹⁵ *Ibid.*, p. 1300.

⁹⁶ J. Steffek & P. Nanz, ‘Emergent Patterns of Civil Society Participation in Global and European Governance’, in J. Steffek, C. Kissling & P. Nanz (eds), *Civil Society Participation in European and Global Governance: A Cure for the Democratic Deficit?* (Palgrave Macmillan, 2008), pp. 1–29; Organisation for Economic Co-operation and Development (OECD), ‘Innovative Citizen Participation’, available at: <https://www.oecd.org/governance/innovative-citizen-participation>.

⁹⁷ Orts, n. 11 above, pp. 1241–6; Stewart, n. 92 above, p. 132.

⁹⁸ The evolutionary perspective is explained in Section 2.2; see n. 50 above.

⁹⁹ Hirsch, n. 53 above, pp. 1083–4.

Specific techniques for adjustability aim to address the rigidity of the law, which can lock in companies or can lead to companies seeking out legislative loopholes. Table 1 highlights three techniques for driver adjustability. These are explained below, drawing from examples in the EU SUPD¹⁰⁰ and EIA Directive.¹⁰¹

The lower-level technique – scheduled adjustments – is any mention of planned updates of substantive details, such as benchmarks or implementation requirements, in legislation. This can be identified in Article 6.5 SUPD, which requires the percentage of recycled polyethylene terephthalate (PET) in certain beverage bottles to be at least 25% by 2025, adjusting to 30% by 2030. Though still building anticipation for change in regulated companies, this is considered to have the least potential to drive reflexivity as they still rely on the legal system to formulate the substantive details, including the timing of such adjustments.

The medium-level technique for adjustability – threat of regulation – aims to drive self-organization by regulated actors by the threat of future state intervention. This can be identified in legislation as any suggestion or insinuation that more or stronger regulation can be expected in the future if the policy objectives are not accomplished. For instance, Article 15 SUPD states that the evaluation of the Directive ‘shall be accompanied by a legislative proposal’ and, if appropriate, shall ‘set binding quantitative consumption reduction targets’ if targets are not met. This technique drives reflexivity by building anticipation in companies for additional future legislation, which may lead to over-compliance to avoid expensive retrofits further down the line.¹⁰²

Lastly, the higher-level adjustability technique – external adjustments – is where substantive details of a regulatory instrument sit outside traditional, formal legislative procedures and thus can be updated more easily than the legislation. This is considered to have the greatest potential for reflexivity, as regulated actors are continuously anticipating adjustments because of the open-ended timeline of the adjustment procedure. Such adjustability is an embedded feature of self-regulatory initiatives that are not formally controlled or updated by the public law system.¹⁰³ An indicator of this technique is an instrument’s use of vague terminology for performance benchmarks (such as ‘significant’ or ‘minimum adequate amount’), because the regulator did not set a precise benchmark. This is the case with the previously mentioned Article 4.4 of the EIA Directive, which requires developers to identify the ‘likely significant effects’ of certain development projects. In this example the precise benchmarks are (re)formulated by public and private entities, and presented in supporting documents for each environmental topic (such as air, water, noise). Another example is where a legislative instrument requires companies to create their own self-regulating policy objectives and continuously update them, such as yearly improvement plans.¹⁰⁴

¹⁰⁰ N. 29 above.

¹⁰¹ N. 8 above.

¹⁰² Hirsch, n. 53 above, p. 1096.

¹⁰³ We acknowledge that self-regulation is not fully autonomous of the legal system in that these initiatives are often influenced by policy or social trends. However, this technique focuses on whether the *update* of a law needs to go through the formal legislative channels.

¹⁰⁴ Orts, n. 11 above, p. 1299.

The framework presented in this section is a rethink of the very foundations of REL theory. Instead of categorizing certain regulatory instruments as reflexive and others not, the framework of reflexive drivers and REL techniques provides a new way to think about what REL is and how it stimulates reflexivity in regulated actors. With this broader theoretical definition, REL can be applied to any legislative instrument that enhances our understanding of the potential and possibility of legislation to address complex sustainability challenges. This point is elaborated in Section 5.

In the next section we explain which of the eleven techniques (and corresponding drivers) are embedded in the six types of regulatory instrument commonly used in legislation.

4. Reflexive Nature of Six Regulatory Instruments

Previously, REL scholarship argued that certain forms of law (private regulation, law encouraging disclosure, and procedures for self-evaluation) inherently embody a reflexive rationality. They were assumed to have greater potential to drive reflexivity in regulated companies than more common types of regulatory instrument (market-based, performance-based, technology-based instruments), which are more characteristic of formally or substantively rational legal approaches. However, this distinction between more or less reflexively rational legislative instruments had not advanced since REL was first introduced in the 1990s, thereby limiting the potential application of the theories in understanding the governance of sustainability challenges, which often make use of so-called less reflexive regulatory instruments. In this section we move past this foundational definition of REL to enable a more nuanced explanation of how six types of regulatory instrument used in legislation can be considered REL, and why.¹⁰⁵ We define these six instruments through a description of their core functions and examples, and explain the nature of each instrument according to its relationship with the eleven REL techniques presented in Section 3.

The first instrument category – self-regulation-based instruments – consists of articles in public legislation that establish a voluntary, private regulatory initiative, such as industry standards.¹⁰⁶ Functionally, they let companies ‘determine and implement their own internal rules and procedures to fulfil the regulator’s policy objectives’.¹⁰⁷ Thus, such instruments do not directly regulate the economic activities of companies, but rather push for these companies to work with other private actors and regulate the issue themselves.

As shown in Table 2, no accountability techniques are embedded in self-regulation-based instruments. However, this instrument has three embedded techniques relating to autonomy and adjustability. With regard to autonomy,

¹⁰⁵ We recognize there is greater diversity in regulatory instruments than the 6 instruments on which we focus (e.g., see Friedman, Downing & Gunn, n. 7 above); however, we followed definitions of instruments from Orts (n. 11 above) and built 6 regulatory categories based on the relationship of these 6 instruments with the drivers and techniques in our framework. These relationships are explained in this section.

¹⁰⁶ Orts, n. 11 above, pp. 1287–8.

¹⁰⁷ Fairman & Yapp, n. 9 above, p. 493.

Table 2 Embedded REL Techniques within the Different Regulatory Instruments

Reflexive Driver	Degree of Potential	REL Technique	Regulatory instruments in legislation					
			Self-regulation-based	Disclosure-based	Procedure-based	Market-based	Performance-based	Technology-based
Autonomy	Higher	Participation in (re)formulation	+					
	Medium	Autonomous choice	+	+	+	+	+	
	Lower	Explicit options						
Accountability	Higher	Third-party participation in (re)formulation						
	Medium	Public disclosure		+				
		Third-party verification						
	Lower	Awareness raising						
Adjustability	Higher	External adjustments	+		+			
	Medium	Threat of regulation						
	Lower	Scheduled adjustments						

Key '+' denotes where a REL technique is embedded within an instrument.

higher-level and medium-level techniques are embedded. This is because if companies decide to establish a private regulatory initiative, they control the substantive details of the initiative (participation in (re)formulation) and individual sustainability improvements (autonomous choice). Thus, self-regulation-based instruments are considered to have a high degree of autonomy by nature. Regarding adjustability, the higher-level adjustability technique (external adjustments) is also embedded in this category of instruments because any updates to the self-regulatory initiative are autonomous and need not go through formal legislative procedures.

The instruments in the second category, disclosure-based instruments, are defined as requirements for voluntary or mandatory public disclosure of information on internal company processes or practices. Examples include emissions reporting, eco-labelling, or mandatory labelling of environmentally harmful products.¹⁰⁸ Functionally, these instruments use transparency to encourage more environmentally responsible behaviour by companies.¹⁰⁹ Thus, they do not directly regulate economic activities, but instead focus on the disclosure of information to put pressure on companies to improve their performance.

Table 2 shows that, by their very nature, these instruments have links with the autonomy and accountability drivers. For autonomy, the medium-level technique (autonomous choice) is embedded as a result of the informational nature of this instrument. Rather than prescribing specific sustainability improvements, the choice is left open to regulated companies. For accountability, public disclosure (medium-level technique) is embedded, making this the only instrument with embedded accountability.

The third instrument category, procedure-based instruments, consists of voluntary or mandatory obligations for regulated companies to self-evaluate their performance against vague performance benchmarks, with further detail sitting outside the law. Functionally, such instruments work by (re)structuring companies' internal decision-making procedures 'to promote continuous improvements in the environmental performance of industrial activities'.¹¹⁰ Thus, procedure-based instruments directly regulate companies' procedural activities as opposed to their economic activities. An example of a voluntary procedure-based instrument is the EU EMAS,¹¹¹ while a mandatory, command-and-control enforced example can be found in the aforementioned EIA obligations, whereby development projects over a certain size must self-assess their development to ensure they do not exceed 'significant' levels of environmental effects. This is the defining feature that sets this instrument apart from the performance-based instrument (discussed below): namely, that the performance benchmarks, or standards, against which companies must self-evaluate their

¹⁰⁸ Our categorization of eco-labelling as a disclosure-based instrument differs from that of Orts who categorized them as market-based. We consider that all disclosure-based instruments affect the market (to different degrees) but notably they do this through public disclosure, while market-based instruments do not have transparency embedded in their nature; see Orts, n. 11 above, pp. 1246–51.

¹⁰⁹ Orts, *ibid.*, p. 1246; Stewart, n. 92 above, p. 31.

¹¹⁰ Teubner, n. 10 above, p. 257; Orts, n. 11 above, p. 1290.

¹¹¹ The EMAS (Regulation 1221/2009, n. 64 above) is a voluntary scheme but has the potential to be mandatory; see Orts, n. 11 above, pp. 1292, 1312.

performance are either vague (such as ‘significant’ impacts in the EIA Directive) or not prescribed. This means the precise benchmarks sit outside the formal legislative system.

Table 2 highlights the nature of procedure-based instruments with regard to embedded REL techniques for autonomy and adjustability. Firstly, medium-level autonomy (autonomous choice) is embedded because the choice of sustainability improvements is left to the regulated company. Secondly, higher-level adjustability (external adjustments) is embedded because the substantive details of the technological/performance assessment benchmarks sit outside the formal legal update system. In his study discussing the EMAS, Orts highlighted that an important element of the instrument is accountability through public disclosure (higher level) and third-party verification (medium level). These are also features of the EIA Directive. However, rather than them being embedded in the very nature of procedure-based instruments, we consider them to be nurtured, or designed in, and optional. Therefore, they are not included in Table 2.

The fourth instrument category, market-based instruments, consists of voluntary or mandatory financial rules that establish or transform costs relating to pollution. In terms of their core function, they conceive negative environmental impacts as economic ‘externalities’, or external costs, and aim to artificially structure the market to make polluting companies account for these costs.¹¹² According to REL, the three main market-based instruments applied in legislation are (i) pollution charges and taxes, (ii) financial incentives to encourage pollution abatement (for example, tax breaks), and (iii) pollution permit and trading schemes (for example, the EU Emissions Trading System (EU ETS)).¹¹³

As shown in Table 2, market-based instruments have only the medium-level autonomy technique (autonomous choice) embedded in their nature, as specific sustainability improvements are not prescribed. Instead, these instruments work by making companies reflect on the costs of pollution abatement against the costs of continuing with the status quo, and paying for it either in taxes, as the lack of any incentives, or buying pollution permits.¹¹⁴

The fifth instrument category consists of performance-based instruments. These are mandatory rules that prescribe a performance standard, or benchmark, for polluters, such as maximum emissions levels that may be issued through a permit to pollute.¹¹⁵ These instruments do not tell companies precisely how to achieve the performance benchmark but may be supplemented with an obligation to adopt BAT.¹¹⁶ In a functional sense, performance-based instruments are ‘purposive, goal-orientated’ regulation, meaning that the legislator prescribes a benchmark and regulates company activities through the threat of a penalty.¹¹⁷ Like all other instruments described above,

¹¹² Orts, n. 11 above, p. 1242.

¹¹³ *Ibid.*, pp. 1243–4. Regarding the EU ETS, we refer to Directive 2003/87/EC Establishing a System for Greenhouse Gas Emission Allowance Trading within the Union and Amending Council Directive 96/61/EC [2003] OJ L 275/1.

¹¹⁴ Orts, n. 11 above, p. 1271.

¹¹⁵ *Ibid.*, p. 1235.

¹¹⁶ Hirsch, n. 53 above, p. 1094.

¹¹⁷ E.g., fines or imprisonment; see Teubner, n. 10 above, p. 240.

performance-based instruments give autonomy to the regulated companies to decide on the sustainability improvements themselves. In other words, ‘a race to the top is implicitly encouraged’.¹¹⁸ Therefore, autonomous choice (medium-level autonomy) is embedded in this type of instrument.

Lastly, technology-based instruments are command-and-control instruments which directly affect companies’ economic activities by prescribing mandatory rules for companies to meet specific technological benchmarks. A classic example is requiring catalyst converters or air pollution filters on smokestacks.¹¹⁹ Similar to performance-based instruments, regulatees must implement the technology to avoid a penalty.¹²⁰ This is the only instrument that does not have any embedded REL techniques, as shown in Table 2.

In summary, the taxonomy presented in this section transcends traditional reflexive law distinctions of instrument classification, allowing for a more nuanced understanding of when specific legislative instruments can be considered REL, and why. In the following section we delve into how this new taxonomy enhances our understanding of the potential and possibilities of each instrument with regard to stimulating regulatee reflexivity.

5. The Potential and Possibilities for Reflexivity through Legislation

This article presents a refined taxonomy of reflexive drivers and REL techniques. The framework moves beyond previous REL approaches outlined in Section 2, which used a binary categorization of regulatory instruments as being REL or not. Our new framework for defining REL is based on a broader theoretical underpinning of reflexive law. As shown in Section 4, this framework provides a clearer taxonomy for understanding how regulatory instruments used in legislation can be considered to be REL based on whether any REL techniques are embedded within them. We argue that this is an improved basis for categorizing some regulatory instruments as REL and others not, and understanding their effectiveness in driving reflexivity.

This section outlines in two respects the practical and theoretical value of refining REL through the framework of autonomy, accountability, and adjustability. The first is in understanding the *potential* of each instrument to drive company reflexivity with regard to its nature and how this differs from previous categorizations of instruments. The second is in understanding the *possibilities* of each instrument to drive reflexivity, depending on which drivers can or should be nurtured into its design. Based on these insights, we invite scholars to test the taxonomy in different empirical contexts to explore the transformative potential of REL.¹²¹

¹¹⁸ S. Deakin, ‘Reflexive Governance and European Company Law’ (2009) 15(2) *European Law Journal*, pp. 224–45, at 229.

¹¹⁹ Orts, n. 11 above, p. 1235.

¹²⁰ Teubner, n. 10 above, p. 240.

¹²¹ Such studies are already under way; see n. 25 above.

5.1. *The Potential for Reflexivity by Nature*

Our framework improves understanding of when specific public law instruments qualify as REL and when they do not. Firstly, we have shown why those instruments traditionally seen as REL (self-regulation-, disclosure-, and procedure-based) are, in fact, REL, based on the techniques that characterize these instruments. For instance, self-regulation-based and procedure-based instruments both have embedded techniques for autonomy and adjustability, while disclosure-based instruments have embedded techniques for autonomy and accountability. This is a more schematic justification for why they are considered REL than previously understood. Secondly, the framework provides explanation as to why an instrument is or is not REL. Specifically, technology-based instruments are the only category without embedded techniques. Thus, this matches REL literature in which such instruments are not REL by nature.¹²² Lastly, and different from the REL scholarship, two instruments not traditionally seen as REL (market-based and performance-based) both have a REL technique embedded in their nature (autonomous choice), which builds potential for reflexivity through autonomy. Therefore, our framework has shown how these instruments that are not traditionally seen as reflexive law contain elements that have potential to drive reflexivity based on REL theory.

In addition to understanding whether an instrument incorporates REL techniques, the framework allows one to judge the nature of an instrument in even more nuanced ways. For instance, all instruments other than technology-based have just a medium level of autonomy embedded within them, while self-regulation-based instruments also have the higher level of autonomy. Therefore, it is now possible to explain, through comparison, how legislative requirements for self-regulation to be established give the most autonomy to regulated actors. Regarding the other drivers, only one instrument (disclosure-based) has accountability embedded in its nature, while for adjustability both self-regulation-based and procedure-based instruments have the higher-level adjustability technique embedded. This detailed assessment is important because it enables an understanding of the baseline characteristics of these regulatory instruments, to know where their strengths are in terms of suitability to govern a particular issue, and what other techniques might be needed to fill any imbalances that these embedded techniques create.

5.2. *The Possibilities for Reflexivity by Nurture*

The framework enables an understanding of the possibilities of each instrument to embed REL into regulation to foster reflexivity. This is done by identifying which reflexive drivers should be targeted to balance any embedded techniques and the varying levels of potential of each REL technique in driving reflexivity. As explained in Section 3, each embedded technique links to an overarching driver (autonomy, accountability, adjustability). This enables a higher-level view to understand which drivers are fostered by an instrument and, according to the context of the sustainability

¹²² Orts, n. 11 above, pp. 1235–40.

challenge being governed, whether gaps in other drivers need filling to increase the potential of the law to drive company reflexivity. For instance, all techniques except technology-based have some degree of autonomy, but most fell short in terms of accountability or adjustability. Therefore, this indicates certain imbalances or gaps that may warrant attention to address challenges presented by autonomy.¹²³ Likewise, technology-based instruments have no embedded drivers; thus they are the least reflexive, and are at risk of failure to incorporate wider knowledge and resources into the regulatory approach, and account for societal evolution.

We consider that stimulating reflexivity through law rests on an appropriate balance between the three reflexive drivers. Some initial assumptions about the appropriate balance between these drivers can be made. For instance, a degree of autonomy needs to be matched with a similar degree of accountability. In Section 3 we highlighted how the higher-level autonomy technique (participation in (re)formulation) should be matched with the higher-level accountability technique (third-party participation). Additionally, situations with less autonomy could be balanced with more adjustability. Less autonomy indicates more state control over the substantive details of the law, and some form of adjustability may be able to rectify problems that arise from the limitations of the state in deciding these details.¹²⁴

However, assumptions regarding the balancing of these drivers are context-dependent; governing market actors through law is challenging,¹²⁵ and selecting an effective regulatory instrument involves context-based evaluation.¹²⁶ In theory, the level of autonomy should be balanced with accountability or adjustability; determining which technique might be the most effective necessitates a contextual evaluation.

A study by Saurwein provides the starting point for this contextual assessment.¹²⁷ He highlights 11 contextual factors which are important considerations in deciding what kind of REL approach is suitable. Such factors include economic benefits for the industry, reputational sensitivity of the industry, capacities of the industry or government actors to address the regulatory issue, and the severity of the regulatory issue. Assumptions about the effect of these contextual factors on the effectiveness of the reflexive drivers and REL techniques can already be deduced. For instance, the factor 'reputational sensitivity of the industry' has links with accountability techniques. Specifically, if an industry has a highly sensitive reputation, comprising well-known brands, then the medium-level accountability technique (public disclosure) is more likely to be effective than in an industry that does not have such a public profile. In the latter case, other accountability techniques are more suitable. If regulatory requirements bring 'economic benefits for the industry', or if the 'capacities of private actors' to assume these requirements are high, then autonomy techniques are likely to be effective.

¹²³ These challenges were outlined in Section 2.

¹²⁴ Teubner, n. 10 above, pp. 254–5; Orts, n. 11 above, p. 1260.

¹²⁵ M. Mölders, 'Irritation Design: Updating Steering Theory in the Age of Governance' (2021) 9(2) *Politics and Governance*, pp. 393–402.

¹²⁶ Friedman, Downing & Gunn, n. 7 above, pp. 380–6.

¹²⁷ Saurwein, n. 24 above.

Additionally, certain contextual scenarios might indicate that an approach based on REL is not appropriate, but the framework still has value in such instances. For example, in exceptionally dire situations with a ‘need for urgent action’ but ‘high scientific uncertainty’ and ‘low capacities of public actors’ to assume regulatory tasks, the regulator could build a bespoke approach and select a lower- or higher-level technique more in tune with the context. This could involve, for example, setting a technical benchmark to ensure that the urgency of the issue is addressed, but allowing regulated entities to participate in formulating/deciding the precise technology (higher-level autonomy), or incorporating some form of adjustability to account for scientific knowledge gaps. In this scenario the balance between drivers is the key element of the bespoke approach. Alternatively, an approach might focus on the specifics of a technique. For example, regarding the sensitivity of the industry to public opinion, the industry may not be sensitive to consumers but more sensitive to upstream suppliers; therefore, disclosure platforms (medium-level accountability) could be orientated towards the upstream suppliers.

Moreover, bespoke regulatory approaches can utilize the scaling of REL techniques in our framework as having a higher, medium or lower level of potential to drive reflexivity, to enhance the usability of REL. This scaling enables comparison between the techniques. In practical terms, it allows regulators to dial up or dial down the reflexive drivers according to the context. In other words, in contexts where a higher-level technique is not likely to be effective, a medium- or lower-level technique can be selected.

In other cases where a lower degree of REL appears to suit the context of the regulatory issue, our framework enables regulators not only to avoid higher-level techniques in building an instrument but also to change the type of instrument, or even to focus efforts on building a more suitable context for the reflexive drivers and techniques to work.

In summary, our framework not only narrows reflexive law in a theoretical sense, through tangible and adjustable REL techniques, but also broadens its scope through the umbrella concepts of the reflexive drivers. This creates a path for future research to apply reflexive law, thinking more broadly, to any private or public law tool – whether in a more detailed sense by looking at the techniques, or broadly by looking at the overarching drivers and the governance of reflexivity. Ultimately, this means REL does not have to remain restricted to the EU and United States, but can be applied to new jurisdictions.

6. Conclusion

The world is currently facing numerous overlapping complex sustainability challenges, such as climate change, biodiversity decline, food provision, and water and waste management. Legislation continues to play a fundamental role in the governance of such transnational challenges and the driving of reflexivity by regulated companies is an important tool at the disposal of regulators to help in addressing these challenges.

Our refined framework revisits a core element of REL. In moving past previously restrictive categorizations of regulatory instruments as formally, substantively, or

reflexively rational, we have used these definitions and underlying reflexive law theories to get to the heart of how law actually builds potential for regulatee reflexivity. This more nuanced approach, based on three reflexive drivers and eleven REL techniques, develops an understanding of why certain instruments are capable of driving reflexivity and, at the same time, the limitations that these instruments have in doing so, based on their nature and how they are designed. This unlocks the potential of reflexive law as a theoretical tool to understand how regulated companies, including transnational companies, can be driven towards more reflexive responses to better address sustainability challenges.

In navigating the complexities of our global environmental challenges, REL stands as a powerful force for change, and the framework outlined in this article is a crucial first step in determining whether to use or avoid REL according to the context of the regulated issue. However, the success of REL as a transformative tool to address global sustainability crises rests on whether it leads to reflexivity by regulated actors, or mere incremental responses to the law. Therefore, REL's true potential can be fully realized only through continued and rigorous research. The call is clear: further investigation into the implementation of REL in legislative frameworks and in-practice effects on reflexivity will not only refine our understanding of REL but also amplify its role as a catalyst for transformative environmental action on the global scale.

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