From *Lex Scripta* to Law 4.0
On Legislation of the Future[1]

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1 Lex Scripta

For long time legislation has shown a stable external form, in the English language often referred to as black letter law. In essence, this means that legislation is identical with written rules, traditionally on paper but currently also available via different kinds of electronic media. This presupposition is valid for almost all legal systems, although the identity and nature of the laws may vary considerably. Textual form is likewise a core component in situations where other materials, so-called legal sources, supplement the legislation, i.e. case law, preparatory works and legal doctrine. The interconnection between law and text – the notion of *Lex Scripta* – actually dates back to ancient Rome and thus has a history spanning more than two thousand years.

A consequence of the reliance on text is that the nature of legal work has changed little over time. Lawyers study and interpret texts, construe rules by means of juxtaposing text fragments from different legal sources and handle documents, books and various forms of text compilations. Lawyers must also possess writing skills as most legal decisions, commentaries and communication presupposes a textual form.

While there have existed earlier and parallel oral traditions as well as attempts to visualise law,[2] it is apparent that text is the dominating means of communication in the legal sphere. From a historical point of view, it is also obvious that laws in written form constitute the first widespread, substantial manifestation of legal instruments.

Another characteristic feature in the traditional understanding of law is that it originates from an authoritative dictator or obtains legitimacy by means of stemming from a democratic process. This precondition reflects the assumption that there exist senders and receivers with different identities – a dichotomy frequently exposed in conflicting interests and clashes between the lawgiver and those affected by the rules. Several theoretical models for analysing these conventions and consequences exist,[3] and in legal theory law's binding force, power and aspects of normativity have been focal points for a long time. For the terminology chosen in this article *lex scripta*, i.e. written laws of authoritative origin is denoted as Law 1.0.[4]

2 *See* e.g. Modéer, Kjell Å, Sunnqvist, Martin (eds.) *Legal Stagings: The Vizualization, Medialization and Ritualization of Law in Language, Literature, Media, Art and Architecture*. Museum Tusculanum Press, Copenhagen, 2012.

3 The literature is voluminous and the terminology varies. *See* for an example on the notion of contractualism, David Boucher, Paul Kelly (eds) *The Social Contract from Hobbes to Rawls*. Routledge, London, New York, 2004 (1994).

4 In this article, which merely outlines a structure intended to facilitate discussions on the development of legislative methods, it would be possible to describe this and other kinds of laws simply as type 1, type 2 etc. The reason for why decimals are included is to make the text consistent with succeeding contributions, which contains extended numerical classifications of subclasses of laws.

2 Law 2.0

Parallel to Law 1.0 there exist other forms of regulative mechanisms, several with longstanding traditions.[5] Sometimes these regulations provide alternatives to Law 1.0, in other circumstances they function as complements. A common denominator is *Soft Law* and while no accepted definition exists, it refers to a variety of instruments such as treaties, non-binding or voluntary resolutions, contracts, recommendations, codes of conduct and standards.[6] Soft Law also appears in the written form. The main difference as compared to Law 1.0 is that its details may be negotiable and that it essentially originates from, and becomes adopted by non-state actors with direct interests in the issues addressed.[7] Accordingly, rules of this kind are often referred to as the results of co- and self-regulation.

It is noticeable that the European Union for quite some time has encouraged states to always investigate whether alternatives can provide viable solutions, and only use Law 1.0 as a last resort. It is explicitly stated that "Classic regulation ... should not be the automatic choice" and that "[a]lternatives can sometimes be quicker, more flexible, cheaper and more effective." It is suggested, "that those developing policy should systematically compare all the delivery options … at an early stage and choose the most appropriate one that will successfully implement the policy in the most efficient and least burdensome way." As examples of alternatives to traditional legislation, mention is made of "taking no action, providing information or guidance, using market based instruments, co-regulation, self-regulation, social partner agreements, and issuing recommendations".[8]

Soft Law solutions may nevertheless be impractical because they may lack operative mechanisms for implementing decisions. As compared to Law 1.0, this is a notable difference. Legal enforcement agencies and public authorities regularly monitor and carry out the effectuation of Law 1.0, and when such powers are lacking, there is always a risk for maltreatment of weaker parties, due to imbalances of resources.

It is easy to expand the discussion of pros and cons of Soft Law mechanisms and their relationship to Law 1.0, especially if one decomposes the concept into its various manifestations. What is important in this context, however, is the observation that Soft Law initiatives are attracting growing interest and that the

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5 On diversity of regulative models, *See* e.g. Poullet, Yves, *The Various Regulatory Techniques on the Internet and the Role of State Law*, In Economia e diritto del terziario, no 2, 2001 p. 531-542.

6 *See* Wahlgren, Peter (ed.), *Soft Law*, Scandinavian Studies in Law Volume 58, Stockholm Institute for Scandinavian Law 2013.

7 *See*, for the historical origin and development of Soft Law, Anna di Robilant**,** *Genealogies of Soft Law.* The American Journal of Comparative Law, Volume 54, Issue 3, 1 July 2006, p. 499–554.

8 Quotations from Better Regulation Task Force, *Routes to Better Regulation: A Guide to Alternatives to Classic Regulation*, London, 2005 p. 5-6. "www.eesc.europa.eu/sites/ default/files/resources /docs/routes_ to_better_regulation.pdf".

variants are increasing. Consequently, Soft Law provides concrete forms of regulation, distinct from Law 1.0, and is in this paper denoted as Law 2.0.

3 Law 3.0

During the last decades, the ongoing digitalisation and society's increased dependence on technology has brought about a need for new regulative forms. Transformed work processes and new tools require access to regulatory mechanisms of operative nature that are to be able to function autonomously.[9]

The response to this need has been swift and already *embedded regulations* dominate in many areas of society. Tax law is perhaps the most prominent example; millions of preprogramed computer systems handle virtually all types of tax deductions and manage decisions concerning income tax declarations. At the societal level, the dependence on embedded rules is absolute in this domain. Manual routines for calculations and tax deductions no longer exist and although Law 1.0 provides the legal basis, it offers no practical support.

In tax law, as in many other areas, embedded rules are necessary complements to Law 1.0, providing the operative details and ensuring compliance with policy decisions and legislation. Embedded rules may however also take over the traditional role of Law 1.0 and provide all the essential components of it. This may occur either as a conscious choice by the legislator, or by means of establishing *de facto* standards in areas where Law 1.0 is inefficient, obsolete or non-existing.

The Swedish law on congestion tax illustrates the former strategy, stating, "On account of the tax authority the Transport Agency shall, by means of automated processing of data in the road-traffic-register, decide about congestion tax".[10] The law does not stipulate any details, nor does it provide any technical specifications to define the operations. The result is a completely automated system of considerable complexity, designed by an ICT company deciding the tax for 7-8 million monthly passages of vehicles in the capital of Sweden alone.[11]

Embedded rules may also become primary regulative tools when traditional laws are non-operational. The Swedish Law 1.0 stipulating sanctions for data intrusion ("hacking") provide a blunt illustration of this. It stipulates that "a person who, ... unlawfully obtains access to a recording for automatic data processing or unlawfully alters or erases or inserts such a recording in a register, shall be sentenced for breach of data secrecy to a fine or imprisonment for at most two years."[12] A recording in this context includes information processed by electronic or similar means for use with automatic data processing and the

9 Lessig, Lawrence, *Code and other Laws of Cyberspace*, Basic Books 1999.

10 Lag (2004:629) om trängselskatt, sction 2, translation by the author.

11 "transportstyrelsen.se/sv/vagtrafik/statistik-och-strada/Vag/trangselskatt11/stockholm/".

12 Swedish Penal Code (1962:700), Chapt 4, section 9c revised wording 2014, translation by the author.

same applies if a person unlawfully by similar means seriously disturbs or blocks the use of such information.

As it is often too demanding and sometimes impossible to identify the individuals behind virus attacks, the spreading of trojans, or distributed denial of service operations, the Law 1.0 stipulating sanctions for data intrusion is obsolete and has little or no effect. Necessary mechanisms for safeguarding computers and IT-systems are antivirus programs, firewalls and predefined access levels. In practice, these are embedded mechanisms containing detailed rule systems, able to identify and block malware and only give access to appropriate data, software and legitimate users.

Tax law and security mechanisms for protecting technical systems are merely examples. It is easy to understand that embedded regulations of various kinds are necessary components in developments of e-governance and e-economy, e.g. for the identification of persons, control of admissions, legal preconditions, time limits and execution of countless actions. The need to embed rules is also apparent in the development of devices intended to function autonomously. Self-driving vehicles illustrate this – in order to function they must have access to implemented traffic rules, and as the digitalisation continues the demand for embedded regulative mechanisms become ubiquitous.

Physically implemented rules can operate on a very detailed level and handle complex material. As compared to Law 1.0 this is an advantage and when combined with embedded rules, the need to elaborate details in Law 1.0 often decreases. This is a general trend, clearly reflected in the EU General Data Protection Regulation (GDPR), implemented in 2018. The GDPR merely defines general requirements, i.e. *if* you intend to process personal data, *then* you must implement mechanisms safeguarding a number of requirements by means of data protection by design and data protection by default.[13] The GDPR does not specify details and it is up to those responsible for the physical development of the systems to design and implement the effectuating details.

In the process of implementing embedded regulations, it is necessary to make the relationship between the policy and the operative mechanism clear, preferably by means of explicitly delegating the responsibility for effectuation to an identifiable operator in a Law 1.0 component. This is a natural parallel to the established tradition of delegating the right to issue ordinances to public authorities. Obviously, in most cases it is also recommendable that embedded systems executing legal rules are clearly visible and provide references to the underlying policy, e.g. by links to explanatory information.

The fact that embedded regulations have the power to determine how processes will operate has other consequences. The development is not risk free; it can lead to a functional creep towards technocracy, meaning that those controlling the technique can implement mechanisms affecting groups of people, or even societal developments, by means of establishing *de facto* standards or by

13 REGULATION (EU) 2016/679 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation), Preamble section 78.

manipulating the processes.[14] Tampering of embedded regulations can also be very difficult to detect and this is a concrete difference as compared to traditional regulations, which have an indisputable origin and established principles for promulgation. The underlying mechanisms must therefore be transparent and the processes safeguarded. Besides that, solutions of this kind must not clash with fundamental legal principles, such as equality, predictability and freedom of information, etc. and in this respect there is a need to develop control functions.

Despite the varying implications, it is clear that embedded regulations with operative functions exist in parallel to Law 1.0. They are of a different kind and bring about new consequences. Equally indisputable is that they the can be highly efficient and are rapidly becoming essential components in many areas of society, as complements and alternatives. Embedded rules, frequently in the form of computer code is a widespread, substantial manifestation of legal instruments. Embedded regulations constitute Law 3.0.

4 Law 4.0

As the digitalisation continues, new devices utilising self-learning algorithms, block chain technology, machine learning and predictive modelling appear on a daily basis. More frequently such inventions are able to change their behaviour and adapt to new presuppositions autonomously, which is a sought–after function in many situations. A name for such devices able to carry out physical tasks is *robots* and altogether the phenomenon is commonly referred to as the emergence of *artificial intelligence* (AI). Intertwined with the growing influence of technology is an accelerating societal development, reflected in changing presuppositions in almost all areas of society. From the regulative perspective, these changes raise new demands. In short, effective management of self-adjusting devises requires access to dynamic regulative tools and ultimately there is a need for laws that are able to change their operations autonomously. Consequently, there is a need for new Law 4.0.

Dynamic regulations are not a new phenomenon. Operative rules able to adjust themselves to changing presuppositions have existed for a long time.[15] Widespread forms exist for the regulation of traffic, where the intensity of the traffic automatically may change speed limits and/or redirect the traffic flows – sensors send information to traffic lights and adjustable road traffic signs. Another illustration is road toll systems changing the fees according to the time of the day in order to minimize congestion. The variants are many and the underlying technology for obtaining dynamics need not be very advanced. The

14 Manipulations may take many forms and can be either direct or indirect, *see* e.g. Wahlgren, Peter, *Manipulation: Lagstiftningsteknik eller integritetskränkning*? In Ret, informatik og samfund: Festskrift til Peter Blume [ed] Henrichsen, C., Rytter, J. E., Rønsholt, S., Köpenhamn: Jurist og Økonomforbundets Forlag , 2010, p. 145-153. *Cf.* Kuper, Simon, *How Facebook is changing democracy*, Financial Times, June 15, 2017.

15 Beutel, Frederick K. *Some Potentialities of Experimental Jurisprudence as a New Branch of Social Science*, University of Nebraska Press, Lincoln 1957.

premises nevertheless vary considerably and by generating successively more complex systems and new possibilities, digitalisation alters the presuppositions.

The advancement of robots and applications that are able to alter their behaviour without human intervention is a challenge for all previously discussed types of law. Particularly if changes in performance may extend beyond predefined states. As the consequences of such applications are difficult to predict, to specify and implement adequate rules in advance can be equally problematic. Several, often competing claims have to be satisfied. Dynamic regulations should not only be a safeguard against unforeseen mishaps and errors, they must also respect basic legal principles, and this without unnecessarily hampering the intended positive effects of new inventions. Again, predictability, equality, transparency and a number of other standards call for attention.

Admittedly, Law 1.0 and Law 2.0 are able to regulate dynamic phenomena, but the adjustment of such types of laws presupposes the initiation of negotiations and/or legislative processes, which can be complicated. In addition, promulgation and other activities related to the implementation of revisions are time consuming. Not surprisingly, it is a common opinion that Law 1.0 has difficulty in keeping up with the development, especially in connection with technical matters. Similarly, Law 3.0 can alter its performance and e.g. shut down processes if certain conditions are satisfied,[16] but again, this requires that preconditions and modes of operations are possible to specify in advance. Law 3.0 in the form of predefined computer code cannot identify and adequately respond to unknown states. The need for Law 4.0 is apparent.

5 A Combinatory Strategy

Although the development of Law 4.0 is a challenging long-term project, it is possible to speculate about different strategies for its realisation. A first observation is that although Law 4.0 should be able to operate independently, several of the requirements it must satisfy are identical to the ones that underlie the demand for Law 1.0, Law 2.0 and Law 3.0. It is therefore rational, and for pedagogical reasons desirable, that Law 4.0 embrace previously acknowledged solutions. Various types of law complement each other and together provide successively more diversified and complex regulative mechanisms. Accordingly, apart from the apparent need to analyse possible new technical solutions, it is relevant to discuss how previous forms of regulations can interact and contribute to a distinctly more advanced regulative mechanism, possible to utilise in ever more dynamic environments.

16 An illustration is measures to address market volatility by means of implementing stock market trading halt mechanisms “trading curb” or "circuit breakers". *See* e.g. “www.revolvy.com/main/index.php?s=Trading+curb”.

5.1 Law 1.0 as a Component of Law 4.0

The fact that the law of the future must be able to vindicate and communicate general legal principles makes it reasonable to assume that general instances of Law 1.0 will be a necessary element. A classic on-topic illustration of this is Isaac Asimov's three laws of robotics:[17]

1. A robot may not injure a human being or, through inaction, allow a human being to come to harm.

2. A robot must obey the orders given it by human beings except where such orders would conflict with the First Law.

3. A robot must protect its own existence as long as such protection does not conflict with the First or Second Laws.

Asimov's laws cover almost all imaginable situations due to their high level of generality. In this respect, they have "inbuilt flexibility" in that the instances, present and future, that can be related to them are close to countless. The use of laws 1.0 is also motivated for communicative reasons and as an important safeguard for transparency. Type 1.0 Law can of course also express any other general principle a satisfactory development should relate to, for instance:

4. A robot must respect democratically enacted rules (acceptance of democracy).

5. A robot must not impede human beings' freedom of expression and free access to information.

6. A robot must not discriminate against human beings.

7. A robot must be able to give reason for its activities (demand for transparency and traceability of data).

8. A robot must respect the integrity of human beings (demand for privacy).

However, as mentioned above, laws of the type 1.0 presuppose an addressee. Thus, it is necessary to amend them in order to make them operative. For this purpose, the legal system has a long tradition of defining, elaborating and allocating responsibility to actors in various situations. Accordingly, it is possible to point out actors liable for misbehaving robots, which, depending on the circumstances could be any of the designer, manufacturer, owner or user of the robot. The result would be something as:

17 Asimov, Isaac *Runaround* in *I, Robot* (The Isaac Asimov Collection ed.). Doubleday New York, 1950.

> *If* a robot violates any of the above rules, *then* the designer, manufacturer, owner or user of the robot shall be sentenced for *robot misconduct* to a fine or imprisonment for at most xx years.

The routine to allocate responsibility and stipulating punishment for failure to comply is not an ideal solution as it reflects a reactive strategy – i.e. it prognosticates that misbehaviour will occur. Although legal theory rests on the assumption that the threat of penalty is a general prevention factor[18] it is not flawless, and breaches of law are common. It is likewise foreseeable that responsible agents frequently will be impossible to identify. In such cases, complementary rules must be available. Desirable is also that the corresponding rules can contribute to a future positive development:

> *If* a robot violates any of the above rules, *and* the designer, manufacturer, owner or user of the robot cannot be found, *then* the robot shall be incapacitated *and* dismantled in order to determine the reason for the misconduct.

General types of law of this kind need to be complemented with provisions that are more detailed in order to have substantial effect. This can be accomplished by means of delegating power to public authorities that may issue contextually relevant ordinances providing more detail, and it is relevant to investigate whether they can be combined with Law 2.0 components.

5.2 Law 2.0 as a Component of Law 4.0

The involvement in the development process of the stakeholders affected, less bureaucracy and smoother implementation are important legitimacy aspects, and strong arguments to explore whether the inclusion of Law 2.0 components is viable. Depending on the context, many variants are conceivable. Recognisable contributions range from standardisation of components,[19] certification, implementation of Quality Management Systems and development of ethical codes of conduct for system developers, and many more alternatives are possible. Law 2.0 parts may be either the result of self-regulation or co-regulation and the initiatives may have different origins, stemming from governmental or non-state stakeholders activities.

An example of *self-regulation* is The Association for Computing Machinery's (ACM) Code of Ethics, which consists of "24 imperatives formulated as statements of personal responsibility [and] identifies the elements of such a commitment". The code "outlines fundamental ethical considerations … [and]

18 The GDPR Article 83, section 6 stipulates "Non-compliance with an order by the supervisory authority as referred to in Article 58(2) shall, … be subject to administrative fines up to 20 000 000 EUR, or in the case of an undertaking, up to 4 % of the total worldwide annual turnover of the preceding financial year, whichever is higher."

19 *See* e.g. on activities related to standardisation of AI, "www.standict.eu/news/iec-recent-improvements-toward-ai-standardisation" and "www.iso.org/committee/6794475.html".

addresses … more specific considerations of professional conduct..."[20] The Code is supplemented by a set of Guidelines, which provide explanation to assist members in dealing with the various issues contained in the Code. For example, an ACM member should:

- Contribute to society and human well-being.
- Avoid harm to others.
- Be honest and trustworthy.
- Be fair and take action not to discriminate.
- Honor property rights including copyrights and patent.

An illustration of a more specified professional responsibility in this code of conduct is that an ACM member according to section 2.5 should:

> "Give comprehensive and thorough evaluations of computer systems and their impacts, including analysis of possible risks.
>
> Computer professionals must strive to be perceptive, thorough, and objective when evaluating, recommending, and presenting system descriptions and alternatives. Computer professionals are in a position of special trust, and therefore have a special responsibility to provide objective, credible evaluations to employers, clients, users, and the public. When providing evaluations the professional must also identify any relevant conflicts of interest, as stated in imperative 1.3.
>
> … any signs of danger from systems must be reported to those who have opportunity and/or responsibility to resolve them. See the guidelines for imperative 1.2 for more details concerning harm, including the reporting of professional violations."

Co-regulation can take the form of a standard or a process of non-state origin being recognised by law 1.0. Adherence and implementation of the standard or the process need not be mandatory, but those individuals or organisations that implement it may receive benefits from the authorities, e.g. less intrusive inspections, reduced tax, and/or advantages in procurement processes. An example of the latter is the Authorised Economic Operator Programme (AEO) established by the European Union:[21]

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20 Citations from "www.acm.org/about-acm/acm-code-of-ethics-and-professional-conduct". For an early contribution to the ethics of computers, *See* Weiner, Norbert, *Cybernetics: Or Control and Communication in the Animal and the Machine.* Paris, (Hermann & Cie) & Camb. Mass. (MIT Press) 1948. *Cf.* Computer Professionals for Social Responsibility, (CPSR) *Netiquette Resources* "cpsr.org/prevsite/publications/newsletters/issues/1998/NetiquetteURLs.html/".

21 "ec.europa.eu/taxation_customs/general-information-customs/customs-security/authorised-economic-operator-aeo/authorised-economic-operator-aeo_en#what_is" The benefits of authorised economic operators include *inter alia*, fewer security and safety related controls, and priority treatment at customs clearance.

> "The AEO concept is based on the Customs-to-Business partnership introduced by the World Customs Organisation (WCO). Traders who voluntarily meet a wide range of criteria work in close cooperation with customs authorities to assure the common objective of supply chain security and are entitled to enjoy benefits throughout the EU.
>
> The EU established its AEO concept based on the internationally recognised standards, creating a legal basis for it in 2008 through the 'security amendments' to the "Community Customs Code" (CCC) (Regulation (EC) 648/2005) and its implementing provisions.
>
> The programme, which aims to enhance international supply chain security and to facilitate legitimate trade, is open to all supply chain actors. It covers economic operators authorised for customs simplification (AEOC), security and safety (AEOS) or a combination of the two."

Comparable co-regulative initiatives exist for various branches and are possible to develop for many types of industries. Authorised Digital Operators or similarly defined groups of actors are conceivable conceptions and national as well as international programmes for the certification of trusted actors are possible to initiate.

5.3 Law 3.0 as a Component of Law 4.0

Although laws type 1.0 and type 2.0 are essential for defining and communicating enacted regulatory frameworks and principles, they cannot manage the detailed performance of complex technical systems. Nor can public agencies supervise the development of such systems in a proactively efficient way. Operative rules and standards have to be present in the physical environment, and, as described above, Law 3.0 elements are already necessary in many types of regulations, and will be even more so in the future. Software is obviously also an essential element in the development of features necessary for obtaining flexibility and to a large extent Law 4.0 will be depending on advanced digital solutions. Thus, the issue is not whether Law 3.0 elements will be a component of the legislation of the future; the research question is how embedded elements are possible to extrapolate into dynamic regulative mechanisms.

5.4 Unique Components of Law 4.0

To describe unique components of Law 4.0 in any detail is presently not possible. An analysis must start with an inventory of identifiable requirements. In a second step, provided that a catalogue of desirable functions is possible to present, a strategy for research and development of useful solutions can be outlined.

Important to remember in this context is that almost everything has a legal side to it, and that autonomous devices may address innumerable issues, of which many may have little or no effect on human beings. Some applications, on the other hand, may have direct and considerable impact on our daily lives, and depending on the circumstances and identity of the issues, various important preconditions must be acknowledged.

Consequently, as a hypothesis, and without excluding additional important needs, a first tentative list of necessary abilities for self-governing systems should start out from a set of previously accepted basic legal principles. Such principles are all extensively analysed and elaborated in legal theory, and when affected, directly or indirectly, it should not be possible to neglect them without further discussion. From this follows that autonomous dynamic devices with a potential of interfering with activities of human beings should include functions safeguarding:

- Authorisation (democratic process or delegation of powers).
- Equality (actions must be balanced and fair).
- Predictability (rule of law, actions must be foreseeable and understandable).

The list is no doubt possible to expanded, but already these three principles give rise to several observations. Hence, assuming these principles are valid, autonomous Law 4.0 devices should originate from an authoritative or accepted (certified) body, generate acceptable non-discriminating (legitimate) results and communicate changes in advance to those affected in an understandable form. A suggested legal baseline following from this discussion can thus be summarised as follows:

> *If* a certified robot changes its actions, *and* the actions directly or indirectly may affect human beings, *then* the changes must be legitimate *and* communicated in advance.

6 Summary

This article presents initial considerations originating from a research project on legislation for the future. A specific purpose is to investigate to what extent it is possible to develop regulative mechanisms with inbuilt dynamics, able to operate autonomously.

Four types of regulative mechanisms are identified and it is suggested that laws of the future will depend on customised amalgamations of those mechanisms. The reason for this is that it is becoming increasingly important to manage continuums from general principles to details, as well as manage a dualism of stability and dynamics.

In parallel, a number of established general principles for legislation are discussed. The analysis leads to the hypothesis that autonomous laws, apart from originating from an authorised body, must not challenge recognised principles of predictability and equality. The hypothesis is recast into a general principle for autonomous, self-learning devices (robots) with the potential to have regulative effect on the lives of human beings. Specifications and possible administration of the suggested principle will be addressed in succeeding articles from this project. The discussion on combinatory regulatory mechanisms is visualised below.

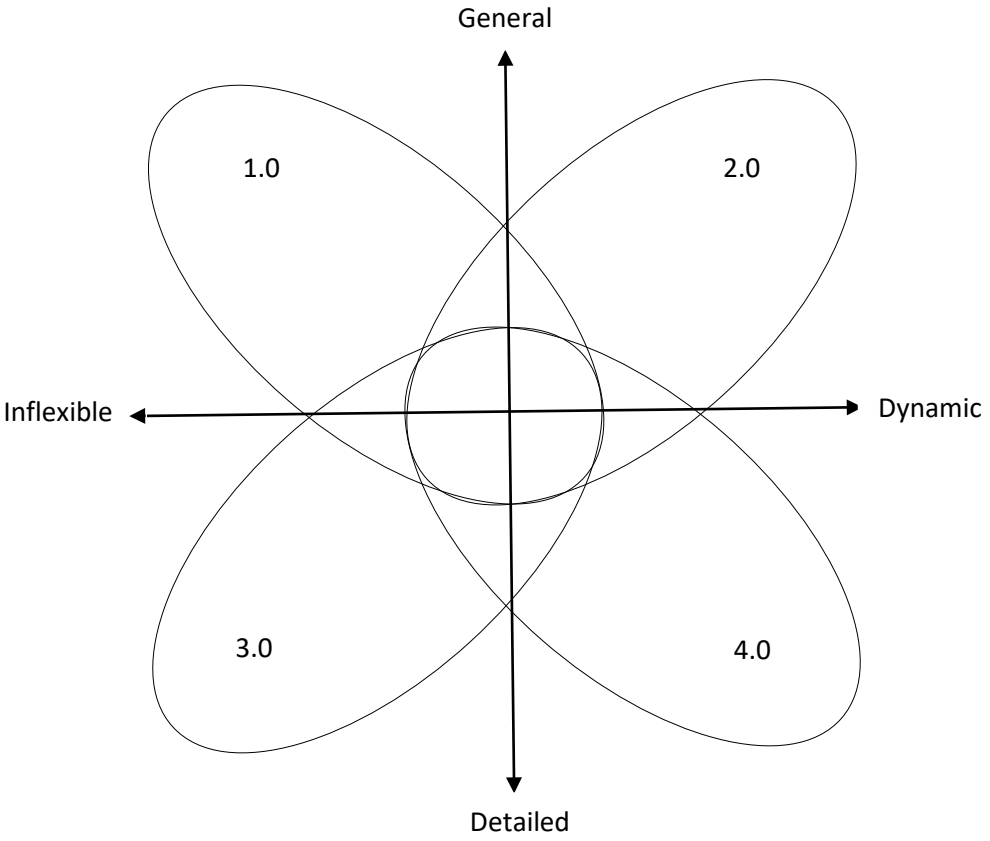

Figure: The various forms of law (1.0 - 4.0) have different strengths and weaknesses with regard to flexibility and capability to specify details, and thus have the ability to complement each other.

Data Protection