

Learning the law

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Abstract: In the population, the knowledge of the law is at best fragmentary. It takes law students years to handle the law properly. How is the law nonetheless able to govern people's lives? To find an explanation, this paper draws on neurobiology, developmental psychology, and the psychology of learning.

Typically, the law reaches its addressees indirectly. The law is not followed, it is learned. There are two learning objects. In childhood, individuals acquire normative proficiency, i.e. the ability to handle normative expectations. This procedural knowledge is gradually filled with the declarative knowledge of individual normative expectations of legal origin.

If the law changes, through secondary learning, individuals must acquire new normative expectations. To that end, some intermediary must translate the new rule into a more contextualized social mirror rule. If changes are fundamental, as after the fall of the iron curtain, individuals must also learn new ways to handle normative expectations.

1. Introduction

The puzzle

Hardly any of the law's subjects know the text of the provisions that govern their conduct. Even less would they be able to handle this text properly, were they to get access to it. Nonetheless, society firmly believes the law not to be feckless. To see why this belief might be justified, one must understand the indirect channels through which the law reaches its addressees.

Roughly, the argument is as follows: Most of the indirect learning of the law takes place in childhood and adolescence. It is referred to here as primary learning. Primary learning of the law is part and parcel of human development, or ontogenesis. Almost from the day of birth on, the child passes through consecutive stages that eventually lead to what may be called normative proficiency. The child learns how to properly handle normative demands, of whatever origin. The further the adolescent progresses, the more this general ability and attitude is filled with concrete normative expectations, including expectations that are derived from the law. Typically, such expectations do

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not reach the young citizen in a technical legal form. They are translated into contextual behavioural expectations. Occasionally, direct and explicit instruction takes place. But normally, the new citizen figures out what she is expected to do by inference. This can be by trial and error, but more often it occurs through observation.

Institutions are crucial in the process of transmitting both elements: the procedural knowledge, i.e. normative proficiency; and the declarative knowledge, i.e. the concrete normative expectations. But legal institutions do only play a subsidiary role in this. The core responsibility is with institutions like the family, kindergarten and school, professional training and social peer groups. Normative expectations are further transmitted by a multitude of more specialized non-legal institutions, like the marketing activities of industry.

An illustration

A very old rule makes a person liable if she invades foreign land without authorization. The law of trespass is a complex set of rules (Restatement 2d, Torts, §§ 157–166). In economic terms, this complexity results from the need to balance out the property right of one owner in a given plot of land with the property rights of her neighbours; with competing private interests like the right of unions to represent the workers in the firm owner's premises (Stein, 1998); and with the public interest in non-discrimination, clashing with the interest of mall owners to scan their visitors (Loader, 1992), or of neighbourhood owners to keep out convicted criminals (Flanagan, 2003). All the carefully crafted compromise rules may be interpreted as normative expectations of the legal order on how a certain conflict should be resolved or, more simply, how owners or intruders ought to behave.

One of these conflicts has received particular academic interest: the one between cattle and crop farmers (Palmer, 1992; Centner, 1997). Ronald Coase has used this conflict to introduce his famous theorem (Coase, 1960; Vogel, 1987). Robert Ellickson has put it to the empirical test (Ellickson, 1986; Ellickson, 1991). No farmer had a complete working knowledge of the legal rules meant to govern their day-to-day dealings. Two public officials, the Animal Control Officer and the Brand Inspector, knew more. But they too were ignorant of the qualifications resulting from case law. The law as perceived by its addressees consisted of a small number of fairly simple black and white rules. Due to a vigorous political conflict over land classification in the near past, however, most farmers knew the basic distinction between open-range and closed-range regions, and they knew the status of their own region. This knowledge was, however, irrelevant for their behaviour, although in open-range land the property right is with the cattle farmer, whereas in closed-range land the property right is with the crop farmer. In their behaviour, they were mainly guided by local norms and by an interest to maintain a long-term working relationship with their neighbours. They next to never went to court. They normally even refrained from

asking for monetary relief, even if an insurance had to pay. They did, however, rely on the law in their dealings with those who were not members of their communities.

Related literature

The behavioural analysis of the law is fairly new (Kornhauser, 2000; Korobkin and Ulen, 2000; Sunstein, 2000), predecessors in the nineteenth century notwithstanding (Zitelmann, 1879; Jhering, 1884, 1904). Apparently in this literature, as of yet, nobody has linked the law to neurological and psychological work on learning. The research question of this paper is orthogonal to the 'behavioural law and economics' tradition. Behavioural research is not used as evidence for individual or social problems, to which the law may or may not react in a paternalistic manner (on that debate, see e.g. Rachlinski, 2003; Sunstein and Thaler, 2003). Neither does the paper adopt a 'bounded rationality' perspective, in the sense of Simon (1957). It is not taking stock of mental 'weaknesses' that any legal designer ought to take into account if her enterprise is to be successful. Rather human learning is extolled as a surprisingly elegant and powerful ability that makes it possible to govern society by a complex, dynamic set of legal rules without, at the same time, forcing all citizens to become attorneys.

In legal theory, most writers are convinced: in order for the law to effectively guide behaviour, addressees must know the rules (Aubert, 1969: 177; Hogan and Henley, 1970: 135,142; Mayntz, 1984: 9). Some consequently admonish the legislator and the administrators to use easily understandable language (Würtenberger, 1996: 89). The information of addressees is a key element in theoretical concepts about the impact of the law on behaviour (Opp, 1971). But there are critics of this idea too (Luhmann, 1969: 214f.). And it has been empirically demonstrated that the degree of knowledge of law is not correlated with a high degree of implementation. This holds for fare dodging, tax evasion, and illicit smoking (Diekmann, 1980: 38, 125f.).

Although it is related, the topic of this paper does not collapse with the work on custom (e.g. Young, 1993) and on informal institutions more generally (e.g. North, 1990). The focus of the paper is on the diffusion of rules, not on their evolution. It does not deny the existence of normative expectations with no backing in the formal legal order. But the paper is not concerned with the different arrangements for generating new formal vs. informal rules, in the difference between formal and informal sanctions, or in the best way of telling formal from informal institutions in the first place (Hodgson, 2006). The interface between legal and social institutions is considered from a specific angle. It is interpreted as a technology for implementing the legal rule.

Many writers have wondered why people abide by obnoxious legal provisions (Jones, 1969; Feeley, 1970; Tyler, 1990). Many point to the fact that human behaviour is guided by custom, rather than by law (Sumner, 1907; Schlicht, 1998: 203 and *passim*). Most people, they claim, see the law as a rule-book,

much like the ones used in tennis or bridge. It is consulted only in cases of doubt or dispute (Friedman, 1975: 28 ff.). The law typically has an indirect effect on behaviour, resulting from people's willingness to follow prevalent custom (see also Friedman, 1975; Hirsch, 1982: 46f.). Friedrich August von Hayek goes even further. Even the distinction between the 'is' and the 'ought' had to slowly evolve, he believes (von Hayek, 1982: 79). Legislation originally was meant to be the mere articulation of rules already practiced (von Hayek, 1982: 81). It was a mere exercise of turning 'knowing how' into 'knowing that' (von Hayek, 1982: 76). It was only legitimate since it made the transmission of rules across generations easier, and the result more predictable (von Hayek, 1982: 77). This helps explain why there is indeed a strong link between custom and the law.

Critics object: this is too sanguine a perspective on the law. Many legal rules are way too intrusive. The law's subjects know that new formal law goes far beyond mirroring existing social custom. They understand that making law is an instance of regulatory politics, and that legal rules reflect political power. Consequently, it is not sufficient for the implementation of the law if its subjects see rule following as useful for themselves. In addition, citizens must be prepared to do what the law expects them to do just because the rule has the force of law. Psychologically, the law must capitalize on the willingness of individuals to submit to what they perceive as legitimate authority (Hodgson, 2007).

This line of argument is highly plausible. It has strong empirical backing in the (scary) experiments by Milgram (1974). Experimental subjects were willing to inflict what they were led to believe was serious pain, if only this was presented to them as being their duty. But it is no counter-argument to the project of this paper. It on the contrary provides it with additional support. Actually, the paper is even more radical. It suggests that normativity, not expediency is key to understanding why people follow (legal and social) rules. In childhood and adolescence they learn to do what they are told to do. Of course, they also learn that there is room for individual freedom, and for pursuing one's interest. But even if legal rules confine themselves to defining the opportunity structure for decentralized coordination, as much of private law does, these framework provisions still come with the normative expectation to be followed. Normativity is straightforward if the legal order prohibits some courses of action, or authorizes only some.

There is a large literature that deals with rule perception, ranging from Schelling (1960) and North (1990, 2005) to Landa (1998). These authors chiefly address a cognitive problem: how come interaction partners are able to coordinate on one out of many possible equilibria? The fact that one and only one equilibrium is in line with a social or legal rule privileges this equilibrium. This paper is in one sense narrower and in another broader. It only considers legal rules. On the other hand, the paper does not assume the underlying social problem, to which the legal rule reacts, to be necessarily a problem of coordination. The paper is agnostic with respect to the legislative aim, which could also be retribution, redistribution, ideology, or even legislative whim.

Summing it up, in talking about custom, the literature means three different things. Custom can first be a term for (one class of) non-legal institutions. It then defines the ‘political’ institutions that make new rules, and that enforce them: customary rules are made by those who later have to follow them, and they are enforced by social sanctions. In this first sense, a rule is customary, if it does not (directly) have the force of law. This is what Hayek means. Custom can second characterize the underlying social problem. In this sense, a rule is customary if abiding by it is an equilibrium. This is what Hodgson rightly accuses of being too narrow. Custom can third refer to the mental mechanism by which the law’s subjects decide to follow a rule. This is how this paper talks about custom. It claims that, rare instances where they directly interact with legal authorities notwithstanding, citizens do not deliberately construe the pertinent legal provisions, but ‘follow custom’. They abide by the law in that they follow contextualized and simplified social mirror rules.

Building on Friedrich-August von Hayek, we can even go one step further. The pervasive ignorance of the law’s subjects is not a defect. It is also more than just a technology for saving transaction cost. ‘The problem of conducting himself successfully in a world only partially known to man was thus solved by adhering to rules which had served him well but which he did not and could not know to be true’ (von Hayek, 1982: 18). Both the individual and society benefit from the willingness of the individual to be guided by what she merely infers to be normative expectations originating in the legal order. The problem solving capacity of the legal order is extended to a class of problems that would be intractable even if all citizens were happy to undergo legal training. For even a professional lawyer is unable to understand ‘the system’. At best she has expertise in a certain class of cases, or in a certain subdiscipline of the law.

The paper aims at specifying the mechanism by which citizens are able to abide by the law without having the expertise of a trained lawyer. In that sense it is about simplicity. But this is not the simplicity that drives the ‘simple rules for a complex world’ program of Richard Epstein (1995, 2006). Actually, the social mirror rules that govern peoples’ lives will hardly ever be parsimonious. The only way in which they are necessarily simple is precisely how they are different from both science and doctrine: they are not abstract, but contextual.

2. Primary learning

Introduction

Learning requires a good deal of effort on the side of legal addressees, and a good deal of institutional safeguards, if the law is to serve as a governance tool. Why has nature made social interaction so cumbersome? Indeed, other species like bees or ants organize complex social interaction with very little learning. Doing the right thing in the right moment is simply part of their genetic endowment. Not so for humans. Many observers even believe that the extreme plasticity

of behavioural dispositions is the most important difference between man and animals (Anderson, 2000: 1; Turner, 2001: 52; Glimcher, 2003). They explain it on evolutionary grounds (Barkow et al., 1992). Going through a lengthy period of learning is an investment that pays. It has allowed human genes to spread, since humanity is extremely powerful in adapting to an ever-changing environment (Hebb, 1949: 111f., 23, 25, 66; Singer, 2001: 886). Therefore, learning is pervasive in humans.

This paper is ultimately concerned with a very specific learning object: normative expectations originating in the law. But the paper claims that this object is learned in ways that are not principally different from the way other learning objects are learned. Consequently, it starts with a presentation of the necessary elements of general learning theory (2). From this, it derives implications for institutional analysis in general (3) and for the learning of the law in particular (4).

Specifically, this section is confined to what is called here primary learning. The term is best characterized negatively. Primary learning ends where previously learned abilities must be overcome, or where previously learned pieces of knowledge must be replaced. The individual is no longer in the business of adaptation. She must engage in re-adaptation.

Learning theory

Primary learning, both in general and with respect to the law, can be analysed at three different levels: neurobiology (a), developmental psychology (b), and the psychology of learning (c) – all have contributions to make. Since this paper does not primarily address behavioural researchers, it seems appropriate to first sketch out the behavioural knowledge drawn upon in the later parts of the paper.

(a) Neurobiology

Among all species, man has by far the largest brain (Anderson, 2000: 1.13). It holds about 10^{11} cells, with about 10^{14} synaptic links (Singer, 2003: 745). This allows humans to handle an extremely large amount of information (Singer, 1991:103). They do so by parallel processing (Singer, 1991: 103). Little of this capacity is preconfigured in the neonate. The genes determine no more than a rough sketch of how the brain can be used (Singer, 1991: 100, 104). All the rest has to be figured out by the child in her interaction with her specific environment (Singer, 2003: 746; to a remarkable degree, modern neuro-biological thought on the interaction between mind and environment has been predated by von Hayek, 1952).

Since the brain of the neonate is virtually free of information about the environment, learning is key to preparing the child for life (Singer, 2001: 886). It is not done in any organized manner, but by way of association (Hebb, 1949: 127, see also 102). Life thus starts with trial and error (Singer, 1991: 100). It allows the brain to engage in self-organization (Singer, 1991: 103). Through a

continuous stream of experiences, the brain gradually constructs models of the physical and social world (von Hayek, 1952: chapter 5). The brain in principle works like a statistical machine. It keeps track of how often cells are activated at the same point of time. This synchrony then results in the stabilization of some links (Singer, 1999).

(b) Developmental psychology

Developmental psychologists explain how the development of the brain translates itself into behavioural patterns in the child. Many developmentalists see themselves as constructivists, rather than individualists (Chapman, 1988). Some define development as enculturation (Astington and Olson, 1995). Others see development as the progressive enrichment of the child's relations with others (Carpendale and Lewis, 2004). Both are valuable points of view. In contrast, this paper sees development as a problem for the developing child. From such an individualistic position, it is easier to understand the implications for institutional analysis and design.

For developmental psychology, the distinction between assimilation and accommodation is crucial (Wadsworth, 1996). Whenever possible, the child tries to make sense of a new element from the environment by assimilating it to categories it already possesses. If an experience does not fit those categories, it may be ignored for the time being (Selman, 1984: 77). But if the child pays attention, the experience inconsistent with her earlier understanding may trigger a leap forward in her mental development (Selman, 1984: 76). Such leaps are labelled accommodation. They make for the fact that child development occurs in discernible stages, rather than as part of a continuous process (Selman, 1984: 71f., 74). There are overlapping, partly even competing ways of conceptualizing these stages (Piaget and Gabain, 1932; Mead, 1934; Kohlberg, 1981). This analysis builds on the typology offered by Robert L. Selman (1984). He takes the development of social cognition as the organizing criterion. This makes his model particularly conducive to understanding the learning of the law.

Selman discerns five stages. Stage 0 is called undifferentiated. The child sees no difference between the physical and the psychological and is egocentric. Stage 1 brings this difference. But the child remains purely subjective. Stage 2 is self-reflective and reciprocal. If the child observes another person, she is able to see the situation from the other person's angle. She assumes that the other person will do the same. At stage 3, the child attributes a personality to her interaction partners, which she assumes to be stable over time and consistent. At final stage 4, the adolescent gains an understanding of the existence of depth psychology, and of social symbols (Selman, 1984: 50–55).

Suffice it to illustrate the stages by the unfolding ways of understanding punishment. At the original stage 0, the neonate sees punishment as an automatic reaction. At stage 1, she understands that punishment can serve different purposes. It can be a pedagogical tool, a way of protecting the child from

danger, and a means of restoring the moral balance. At stage 2, punishment can also be interpreted as a form of communication between the parents and the child. The child understands that parents can make mistakes. At stage 3, it becomes conceivable that punishment is a way for parents to pursue their own interest in keeping the family under control. At stage 4, the adolescent sees that when the parents punish her, they might be driven by deep psychological forces, rather than conscious reasoning (Selman, 1984: 134–146).

(c) Learning psychology

Learning psychologists have demonstrated the power of inference, even in the absence of any conscious cognitive processing (Domjan, 1998). The proverbial Pavlovian dog detects the correlation between food delivery and the sound of the bell. Its organism provisionally interprets it as causation. When it hears the bell, it produces saliva in anticipation of the goodies to come. If this effort has been futile too often, the previous expectation changes. The conditioned response is extinguished (Pavlov and Anrep, 1927; Anderson, 2000: chapter 2). An extension is operant conditioning (Thorndike, 1898; Skinner, 1938; Anderson, 2000: chapter 3). The organism responds to the experience that some kind of behaviour is consistently followed by positive or negative reinforcement.

In their efforts to understand the world surrounding them, humans can rely on these subconscious learning tools as well. But humans also possess powerful tools for consciously handling information. This capacity enables them to engage in planned experimentation. Moreover, if the environment imposes experience on them, they can use it to learn in a reflective manner (Bandura, 1986: chapter 3). And humans possess language and the capacity for abstract reasoning. This opens up an avenue for explicit instruction. Instruction makes it possible to reduce or even eliminate the inferential component in learning (Anderson, 2000: 338). Experiences others have previously had can thereby be transmitted. The species can accumulate a stock of knowledge and hand it down from generation to generation.

Instruction is, however, not the only tool for transmitting knowledge across individuals. A powerful alternative is learning by observation (von Hayek, 1982: 18f.; Bandura, 1986). For instance, in a Guatemalan clan, young girls never get any explicit instruction in girls' work. They simply are given miniature copies of their mother's tools. They learn to use them by observing what their mothers do (Bandura and Walters, 1963). Outright imitation is an option in observational learning (Miller and Dollard, 1941; Messick and Brewer, 1983, see also Heyes, 2001). But the power of this learning tool does not end there. Rather, observational learning is vicarious (Bandura, 1977: 122–128). The individual generates mental representations (Bandura, 1986: 48). By doing this, she learns behavioural patterns, judgmental standards, cognitive competencies, and generic rules for creating new types of behaviour (Bandura, 1986: 49).

Finally, the distinction between declarative and procedural knowledge must be introduced (Anderson *et al.*, 2004). Both kinds of knowledge are stored in memory, and can be retrieved. Declarative knowledge is additive. The individual, for instance, learns the characteristic features of dog races. Procedural knowledge, however, is integrative. Its object is abilities, not isolated pieces of knowledge. The individual, for instance, learns how to handle the clutch of her car.

Institutional analysis

This paper claims: the primary learning of the law is part and parcel of general primary learning. Consequently, it would be inappropriate to analyse the law in isolation. In principle, law has an impact on primary learning the same way as other institutions do.

From the perspective of institutional analysis, impacting on primary learning is a fairly unusual purpose (a). Understanding this purpose is necessary to identify those institutions that effectively shape primary learning (b).

(a) Purpose

There are many divergent strands of institutional thinking (Hodgson, 1988; Powell and DiMaggio, 1991; Rutherford, 1994; Hall and Taylor, 1996; DiMaggio, 1998; Immergut, 1998; Peters, 1999). Some are quite sceptical with respect to purposeful institutional design (DiMaggio and Powell, 1991; Hall and Taylor, 1996: 936,940, but see Rutherford, 1994: 51–80). But they all agree that institutions serve a purpose.

From the sections on learning theory, a number of task characteristics can be derived. Primary learning is iterative. Later steps build on earlier ones. There must be opportunities for accommodation, not just assimilation. Consequently, in order to be effective, institutions must be present over an extended period of time. Intervention must be tailored to the respective body of knowledge. This requires a differential approach, at least with respect to cohorts, if not with respect to individual, idiosyncratic stages of development. Institutions must take calculated risks by occasionally surprising the addressee with tasks that transcend her present abilities, while hoping to trigger insight, and hence the entry into a new stage of development.

To a large degree, primary learning is associative. This holds more, the earlier the stage of development. Consequently, the socially expected final result cannot be transmitted to the addressee as a ready-made, final product. The addressee must be given the opportunity to reach the outcome on her own. Moreover, for primary learning, observation is more important than instruction. This implies that successful institutions do not teach abstract rules, but present the addressee with graphic situations.

Invasive, medical methods notwithstanding, the central processing within the brain will typically not come under institutional control. But the remaining

elements of learning are good targets for institutions. Institutions can manipulate attention, for instance, by pointing an adolescent to situations of great importance for society. Institutions can increase learning motivation. This cannot only be done by changing incentives. Since the adolescent must still find her place in society, helping her orient herself can be at least as powerful. Finally, institutions can have an impact on the storage of what has been learned in memory. The two critical parameters are elaboration and retrieval. Information is stored better the more intensely it has been elaborated. Specifically, the number of associative cues is critical (Anderson, 2000: chapter 6). Institutions can use these by offering graphic, colourful context (Anderson, 2000: 213,70f.) and inviting the addressee to actively process the information (Anderson, 2000: 197–203). Long-term memory is most reliable if the learned object has been retrieved several times at sufficiently large intervals (Anderson, 2000: chapter 7). Institutions do therefore work best if they provide the addressee with several occasions for rehearsal (Anderson, 2000: 186f.).

(b) Concrete institutions

It directly follows from the foregoing that legal interventions will not be able to channel primary learning by themselves. The effect of the law must be either indirect or subsidiary. Actually, it seems to be both.

The impact of the law on the development of an adolescent is most visible if the adolescent herself, or someone from her close environment, comes into direct contact with the legal system. This is possible since the law is not a self-enforcing governance tool. When an administrative agency or a court applies an abstract legal rule to a case, it inevitably interacts with the concrete addressee of the law. This interaction presents legal institutions with an opportunity to translate the normative expectation into language the addressee is likely to understand. It thus is an occasion for bringing the abstract rule to human scale (on the importance of occasional direct contact with legal authority see Tyler, 1990).

A second path is more indirect. Legal rules can serve as points of reference in an uncertain environment. They can help learners gain orientation. They can become catalysts in the learners' attempts to make sense out of their social environment. Actually, this is how the discussion on 'expressive law' can be linked to the topic of this paper (Cooter, 1998; Adler, 2000; Anderson and Pildes, 2000). Instances of rule application can contribute to this process. Graphic representations of legal rules, as in traffic signs, may help. The diffusion of knowledge of rules via the media and other intermediaries is equally important.

While the law does thus have an influence on primary learning, the key institutional forces that affect it are different: the family (cf. Kreppner, 1997); kindergarten and school; the church; the institutions for professional training like professional schools, colleges (Newcomb, 1943), and universities, or apprenticeships; institutions for non-professional training like driving schools, dancing schools, military or social service.

Learning the law

We have now assembled the bits and pieces necessary to solve the original puzzle. We can now explain why the law governs behaviour, although only professional lawyers can properly handle the intricacies of the law; although the general public receives hardly any direct legal instruction; although even the wording of most legal rules is unknown to those who are expected to apply them. They have learned the normative expectations inherent in the law as part of their general primary learning. A rich institutional arrangement has taken care of this task. This section defines the task more precisely, and specifies the institutions that contribute to it.

A distinction taken from learning psychology is crucial for understanding how the general public learns the law. This learning has two components. The first can be seen as procedural knowledge. The second component is declarative knowledge (Anderson *et al.*, 2004). The first component is more or less unitary. The adolescent progressively develops this ability. In the following, it will be called normative proficiency (a). The second component is additive. It is composed of a potentially unlimited number of individual normative expectations (b). Normative proficiency and normative expectations are not technical terms in psychology. They are introduced here to capture the essence of the procedural and the declarative knowledge necessary for legal institutions to reach their addressees.

(a) Normative proficiency

The child is surrounded by normative expectations from the very beginning of her life. Her parents tell her what to do and what not to do. They reward the child for obedience, and they punish her for infraction. Normativity is thus among the first experiences that the child has. Along with this, the child learns to control her drives, and to do what is expected of her. Normativity is a fast track procedure for endowing the next generation with the experiences of their predecessors. Any child quickly acquires the ability to handle normative expectations. Otherwise, she could not exist in what is her world in the first years of life, i.e. in her family. Consequently, learning the law starts extremely early in life, already during the first two years (Hammer and Keller, 1997).

In order for the child to accept and properly handle the law, she must acquire a sense of justice (Rehbinder, 1983: 261–274; Eckensberger and Breit, 1997). This presupposes that she adopt a social perspective (Selman, 1984: 45, 48 and *passim*). The child must be able to look at her own behaviour from the perspective of the group, or society (Selman, 1984: 34). This ability starts in stage 2. At this stage, the child can perform the mental operation of self-observation. She considers how others will see her own behaviour. At stage 3, the adolescent is able to simultaneously handle the perspectives of actor and observer (Selman, 1984: 34).

The law confronts its addressees with normative expectations. But these are not the same kind of expectations as those that a mother has of her child. Developmental psychology demonstrates the steps in transforming the understanding of normativity that are necessary for properly handling legal expectations (cf. Tapp and Kohlberg, 1971; Rehbinder, 1983: 261–274; Eckensberger and Breit, 1997: 253–340; Hammer and Keller, 1997: 152–181; Teuchert-Noodt and Schmitz, 1997: 134–151). A child cannot understand why the law is, in principle, a legitimate form of governance unless it abstracts from her own drives and desires. This ability improves from development stage to development stage. The understanding of punishment offers a good illustration of this. Already at stage 1, the child learns that punishment can be pedagogical. At stage 2, she apprehends the communicative dimension of punishment. At stage 3, she learns to accept that punishment is occasionally driven by self-interest, rather than the interest in the child. At stage 4, the adolescent even recognizes that her parents sometimes cannot control the drives that make them administer punishment (Selman, 1984: 138–146).

All of this can be projected to the understanding of legal intervention. It is typically not a mere act of social revenge; instead, it aims at governance. The law is one path of communication between the citizen and the state. Occasionally, the legal system is cast under the spell of the self-interest of those administering it. And sometimes only systemic reasons can be offered for the state of the law: it can only be explained in reference to legal institutions, which act as independent forces, rather than in reference to people who have intended some concrete outcome.

The law is a fairly complex institution. Form and substance are typically separated, as are rule generation and rule application. Validity and preclusion are artificially drawn lines. Facts that cannot be proven in court do not exist for the law. Valid arguments can be taken from documents that are hundreds of years old, or that stem from entirely different branches of the law, and hence life. The law can be changed at any point of time at the legislator's will. Rule application is potentially always rule evolution. For all of these reasons, morality and legality can become separated (Eckensberger and Breit, 1997: 254, 285). Understanding all of this is a precondition for developing generalized trust in the legal system. Such trust is paramount for the proper functioning of the law (Schlicht, 1998: 26).

Normative proficiency therefore implies a fairly advanced ability for abstraction (cf. Bandura, 1986: 100–102). It is only in the last stages of development that the adolescent acquires this ability. At stage 3, the child is able to conceptualize groups as abstract and differentiated social systems. She also gains an understanding of internal organizational structure and of role differentiation (Selman, 1984: 166). Only at stage 4, however, does the adolescent fully grasp pluralism and tolerance. The adolescent now senses the importance of compromise, and the need for formal validity, rather than the enforcement

of universal rules (Tapp and Kohlberg, 1971: 81f.; Selman, 1984: 167f.). The adolescent distinguishes between an office and the individual holding it (Selman, 1984: 132). Group structure is expected to be pluralistic and formally organized (Selman, 1984: 132–134).

It follows from the foregoing that developing normative proficiency is part and parcel of development as such. There is no separate legal proficiency. Consequently, there is no need for separate institutional intervention aimed at directing the child's attention, at giving her a sufficient motivation for learning the law, or at seeing to it that the result of learning is adequately stored in memory. All this is done by the general institutions that affect primary learning.

(b) Normative expectations

Normative proficiency is a necessary, but not a sufficient condition for governing behaviour via the law. If the adolescent has reached the final stage of her development, she knows what to expect from the law, and how to handle its expectations. She thus possesses the necessary procedural knowledge. But on its own, this knowledge is vacuous. It must be filled with declarative knowledge about normative legal expectations. How do the law's addressees learn these expectations, without knowing the wording of statutes, and without having the professional knowledge for interpreting them? How could they, given that modern legal orders contain thousands of rules, and that law students need years before their interpretations are at least reasonable?

In answering this question, we must begin with an adequate specification of the learning object. For the governance effect of law, it is irrelevant whether the addressee knows the wording of the rule. She need not even have an idea of the abstract behavioural requirement underlying the rule. All she must know is what she is expected to do in a concrete situation to which the legal rule applies. The addressees' knowledge of the law can therefore be tacit, implicit, and practical (Polanyi, 1958).

Practically speaking, there are two possibilities. In the first case, the legal rule is *grosso modo* mirrored by a social norm, or by custom (Schlicht, 1998: 25f.). Such mirror rules will not have the same level of sophistication as the underlying legal rule. They will often only cover standard cases, not exceptional ones. That way, what comes with a good deal of qualifications in doctrine translates into a bright line rule, such as: you may drink (no more than) two glasses of beer if you want to drive: although the legal rule is about the concentration of alcohol in the blood, and hence depends on weight; although the legal threshold is grounded in the weaknesses of the available technology for analysing blood, and will be stricter if this methodology improves; although there are different legal standards if the police stops you, and if an accident has happened. The second option pushes contextualization even further. In this event, the addressee learns no general rule whatsoever. Instead, she uses exemplars for normative orientation (Bandura, 1986: 103; Anderson, 2000: 348). She knows what the law expects her to do in

a certain context. She can extend this knowledge to different contexts by way of analogy. This is particularly helpful if the legal rule asks for ‘appropriate’ behaviour, given the circumstances of the case, as negligence standards do.

In principle, any learning mechanism can contribute to the acquisition of this declarative knowledge. Cognitive learning, resulting from open instruction, is one possibility. The mother tells the child that she should not steal. But most normative expectations are learned through inference. All children provisionally overstep what they expect to be their limits. This allows them to learn the exact confines of normative expectations by trial and error. If the child is constantly punished for some kind of behaviour, she will even learn by operant conditioning to avoid it.

The predominant mechanism for learning the normative expectations of the law, however, is observation. This mechanism is precisely tailored to the learning object. By watching how others master a situation, the child gradually learns the underlying models. She for instance first learns that promises are to be kept. She later learns that it is OK to send the merchandise back to the catalogue company if this is done within the time limit specified by the respective legal order. Observational learning also allows the learner to integrate the normative expectations into her own behavioural programmes in precisely the way that is most effective for her. Finally, and most importantly, the possibility of observational learning resolves the second part of the original puzzle. The law’s addressees can indeed be governed by the law without having any knowledge of legal texts.

3. Secondary learning

Two types of secondary learning

The law governs behaviour since the adolescent acquires normative proficiency, and learns the normative expectations of the law when she finds her place in society. But neither of these is static. The law frequently changes. Individuals leave their contexts of origin. Primary learning of the law is therefore not enough to explain the governance effect of law. In order to be effective, it must be complemented by secondary learning. Old ways to behave in accordance with the law must be replaced by new ones.

There are two different situations. In the first, the individual can cope with changes at the level of declarative knowledge. Adding new items, or replacing old ones with a new set, is enough to realign behaviour. In the second, procedural knowledge is affected as well. New normative expectations of the law are so fundamentally different in kind that the individual must also learn a new way of handling them.

Mere legal reform will not typically affect the normative proficiency of its addressees. It takes place within one and the same legal order, state, and society.

The situation may, however, be different after the demise of the entire regime. This might help explain the difficulties that the populations behind the former iron curtain have had in productively handling their newly gained freedoms. The version of normative proficiency they have retained from their earlier exposure to communist regimes is highly inappropriate for the altered economic and legal context.

Fundamental change will be more frequent if it is not the law that changes, but the individual. Of course, not every change of context qualifies. But a newly arrived immigrant will frequently not find the signals she expects. She will often not pay attention, and she will be unable to decipher those signals that are functional equivalents in the new environment. A similar effect is likely if an individual converts to a fundamentally different religion.

New normative expectations

After legal reform, or after individuals have arrived in a new social context, they must add new items to the stock of normative expectations they hold in memory. In principle, these are learned the same way as individual normative expectations are learned in youth and adolescence. Learning still primarily occurs through observation. It is still typically indirect. The learning object is thus usually the social mirror rule or the exemplar, not the professional legal rule. But there are a number of normatively relevant differences between primary and secondary learning.

Development is learning. But learning is not confined to development. The brain of an adult retains the ability to learn (Singer, 1991: 97,109 and passim). The neurological mechanism in principle remains the same as it has been since childhood. Learning still works by modifying the interaction between nerve cells (Singer, 2003: 750). Adults are even able to learn many things much faster than children or adolescents (Hebb, 1949: 127). This results from the fact that primary learning has endowed them with many preconfigured units (Hebb, 1949: 108). On this basis, secondary learning can be confined to finding new ways to combine these units (Hebb, 1949: 156), or to facilitate what had already been stored previously (Hebb, 1949: 180f.).

But there is a downside. The brain of an adult is no longer the (almost) blank slate that distinguishes human children so dramatically from the offspring of animals. Whenever the legislator undertakes reform, it must address individuals who come with a learning history. The addressees must integrate the new object into whatever mental web they have retained from previous experiences. A feature of memory explains why this can be an important impediment to legal reform. Above, the difference between procedural and declarative knowledge has been explained in reference to the fact that the latter is additive. This shorthand explanation should, however, not mislead the reader. The many items of declarative knowledge are not entirely disconnected from each other. The astonishing performance of memory rests on its associative character

(Bartlett, 1932: 208). Retrieval is more likely, the more associative cues are attached to a particular piece of knowledge. Moreover, human memory saves resources by permanently attempting to make sense of information (Anderson, 2000: 200). Memory is therefore reconstructive, not merely recalling (Bartlett, 1932: 204, 206; Anderson, 2000: 285–287). The storage of the new normative expectations can be impeded by interference (Anderson, 2000: 240f., 249). Ironically, for legal reform, interference is more likely, the closer the new normative expectation resembles its predecessor (Anderson, 2000: 243–245). Consequently, psychologically, legal reform is more promising if the new expectations are significantly different, provided they can still be handled by the existing normative proficiency (and provided, of course, the new rules do not trigger reactance, Brehm and Brehm, 1981).

A further difference between the primary learning of the law and the learning that takes place after legal reform is motivational. For the addressees no longer see the same need for orientation, and for defining their own position within the respective social context.

Often, another feature of learning and memory makes legal reform even more problematic. The brain uses resources in as economical a manner as possible. If it realizes that the individual repeatedly faces similar tasks, the brain reacts with expertization. Instead of composing all of the individual steps separately each time an individual is confronted with a situation, the brain stores the entire chain of mental or physical steps as one unit. In the end, one cue may be enough to set the entire programme into motion (Hebb, 1949: 157; Anderson, 2000: 324f.; Singer, 2003: 751). Thereby behaviour is patterned (Anderson *et al.*, 2004: 1038) or even automatized (Anderson, 2000: 310). In principle, expertization makes governance by law more powerful. For expertization implies that the individual does not reconsider whether to follow rules at every new occasion. She just follows rules as part of her way of life. But for legal reform, previous expertization is a problem. It makes it likely that the addressees will simply ignore the change of rules. Moreover, even if the addressees consciously realize that the law has changed, they must undergo a process of unlearning. The previous routine must be deactivated. If the law is to be implemented as easily as before, along with this, a new routine must be established.

In addition to this, there is also a social problem. In primary learning, the predominant mode for learning normative expectations is observation. Children and adolescents observe those who already handle the normative expectations of the law with ease. That way, expectations are transmitted from generation to generation. In legal reform, this does not work. At least some addressees must be reached more or less directly. They are needed as compression intermediaries (Turner, 2001: 26 and *passim*). It is their task ‘to bring the legal rule to human scale’.¹ There are many institutions that can contribute to this. The political

¹ I owe this graphic term to personal communication with Mark Turner.

parties and the media generate awareness of a change in the law. They strive to present the gist of the new legislation to the general public. Lobbyists participate in the process of rule generation. This puts them in a natural position to translate the outcome to their audience.

Not so rarely, policy makers invent ingenious schemes for the purpose. The response of German policy-makers to the problem of plastic waste offers a good illustration. More than half of such waste is from packaging. Since they wanted to meet an ambitious recycling goal, policy-makers could not ignore this waste fraction. The recycling of packaging waste, however, presupposes that households separate waste. Indeed, German environmental law obliges them to do so. But policy-makers rightly surmised that simply laying down that obligation in a statute would not be effective. They found the following way out: they threatened the retail trade industry with a legal obligation to take plastic waste back in their premises. Industry would be exempted, however, if it, by way of self-regulation, met the recycling-quota of the law. This induced industry to heavily invest into a long-term advertising campaign that eventually educated almost all Germans effectively (Lüdemann, 2004).

Updating normative proficiency

The neurobiological challenge becomes much more serious if the change of rules or context is such that the procedural knowledge about handling normative expectations of legal origin is no longer appropriate. This is a two-fold challenge. First, the anatomy of the adult brain has almost entirely lost its plasticity. Second, there are critical phases in brain development. The learning of a second language provides a good illustration of both effects. Hardly anybody who learns one later in life ever reaches the level of proficiency she commands in her mother tongue (Singer, 2001: 889f.).

Does neurological analysis therefore evoke the spectre of a lost generation? The answer crucially depends on further questions. What is the degree of generality in normative proficiency? How strictly is the acquisition of normative proficiency tied to (early phases of) development? Is the entire normative proficiency necessarily acquired via primary learning, or is there an opportunity for some secondary, procedural learning regarding how to handle normative expectations? In essence, these are empirical questions. Apparently, they have not been investigated directly. Psychologists have, however, wanted to know how much procedural knowledge is 'structural' (Mead, 1934), rather than context specific (Selman, 1984: 68). Moreover, psychologists interested in observational learning have explored the possibility of abstract, rather than concrete modelling (Bandura, 1986: 100–102). Work on learning shows that humans in principle retain the ability for procedural learning after adolescence (Anderson *et al.*, 2004).

Casual empiricism seems, however, to imply that there are indeed limits. Some immigrants never integrate, and this may not only result from social cohesion

among those who have the same national origin. Some fundamental changes in the legal order seem to be lost on those who have grown up under a different regime. Some countries have a hard time profiting from the opportunities of globalization, and this may not only result from an opposing ideology, or from inappropriate institutions. But none of this is more than hypothetical. Further empirical research on these issues is urgent.

4. Conclusions

It is possible for the law to govern behaviour without the addressees knowing the wording of the pertinent provisions. It is even less important for the addressees to be able to handle this text as professional lawyers would. This is due to the fact that legal rules reach their addressees in indirect ways. Individuals follow social mirror rules. The addressees mostly learn these compressions of legal rules by way of observation. The law is largely learned this way in childhood and adolescence. This acquisition of declarative knowledge goes hand in hand with the development of normative proficiency, i.e. with the ability to properly handle normative expectations in general. This primary learning of the law is supplemented by secondary learning. This takes place when an adult arrives in a new social context, or when there is legal reform. Legal reform stands out in that initially the necessary compressions are missing. Governance by law therefore crucially depends on the activities of the, mostly non-legal, intermediaries who generate these compressions.

Critics of earlier versions of this paper have repeatedly discussed the scope of the argument. Some believed that what is said here only applies to the acquisition of social norms, not to the acquisition of legal rules.² The argument defended here is squarely opposed to this. It does not deny that social norms and legal rules have different sources. Often, addressees will be vaguely aware of this difference. But this paper claims that individuals integrate the normative expectations of legal provenance into their behavioural programs in the same basic way that they integrate social norms.

Other critics accepted the line of reasoning for the ordinary citizen, but not for professionals³ or for normatively salient minorities, such as criminals.⁴ A related criticism found the argument convincing for restraining rules, but not for enabling rules.⁵ This criticism can be read in two different ways. In the first reading, the crucial point regards incentives. Since knowing the pertinent legal rules matters more for these addressees and in these situations, the critics expect addressees to invest more in learning the rules. This seems plausible. But it does

² Most prominently Victor Vanberg and Ulrich Witt.

³ Martin Beckenkamp has pointed me to this.

⁴ Werner Güth has pointed me to this.

⁵ Elinor Ostrom, Francesco Parisi have made this point.

not refute a learning perspective. Rather, the motivation for learning increases. Addressees elaborate the normative expectations better; they use them more often and hence retrieve them quicker and more reliably from memory.

In an alternative reading, these critics deny that the learning argument applies to rules that addressees see as part of the opportunity structure. If one wants to play a game, one had better know its rules – so the argument goes. Again, the argument makes sense. But still, addressees do not undergo legal training. And even firms do not permanently consult professional lawyers for advice. Even in these contexts, all they know are translations of complex legal problems into heavily contextualized, fairly simple rules. These translations are learned the same way as any normative expectation. More importantly even, rules are not only facilitating devices, they are enforced. Otherwise, they do not stabilize expectations. Ultimately, courts can step in. But transaction costs would skyrocket if formal judicial action were the major enforcement technology.

Legal institutions may, however, have the option to bypass learning. This can be done in three ways: by switching to a different governance tool, by switching to a different addressee, or by redefining the governance task. The need for learning is eclipsed if the governance tool is self-enforcing. This is the most prominent in regulation by technical code (Reidenberg, 1996; Boyle, 1997; Reidenberg, 1998; Lessig, 1999). Swapping addressees is frequent in environmental law. There are only very few rules of environmental law that directly address individuals. Whenever possible, environmental law targets industry. This reduces the need for learning to professionals in this industry. Finally, government can redefine the regulatory task such that learning the pertinent rules is no longer necessary. This is the case if regulatory addressees are obliged to seek governmental approval before they take action. But often, none of these options is available. Institutional designers are therefore well advised to take the need for (secondary) learning into account when making new law.

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