WILLFULLY FENCING THE FOREST (ESSAY)

*By Martin Hostettler**

Abstract

The right to roam forests and pastures occasionally leads to discussions in forest policy circles. This essay discusses the «cathedral of property» perspective by Calabresi and Melamed and proposes a new idea for local regulation concerning the freedom to roam forests. First, it describes the problem and explains the difference between four rules developed by Calabresi and Melamed. Thereafter, it advocates the protection of the right to access forests by Rule 4. This means, the forest owners themselves may deny free access to their forest, however with liability for damages. This essay indicates how Rule 4 could be formulated and how it could be implemented on the forest area.

Keywords: economic analysis of law, entry fee, exclusion, forest recreation, liability rule, property rights

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If Guido Calabresi and Douglas Melamed, two American lawyers, were to take a hiking vacation in Switzerland, they would get their money's worth. They would probably be amazed by our cultural landscape, but certainly by the right to roam the forest. On their forest walks in the Galmwald near Murten, on the mountain in Lenzburg or on the Kleiner Rugen in Interlaken, they would never have to pay an entrance fee. Thereby the two have – based on Coase (1960) – come up with ground-breaking ideas for the protection of property with a new type of liability rule and have shown ways for the further development of Swiss forest trespassing law.

The right to roam forests and pastures, regulated by Article 699 of the Swiss Civil Code of December 10, 1907 (CC; SR 210), hardly ever leads to discussions on forest policy. Nevertheless, this essay takes up the new view of the «cathedral of property» by Calabresi & Melamed (1972) and provides food for thought for a different regulation of forest access.

Mostly fair, sometimes inefficient

Guests from other legal traditions are always amazed at the Swiss freedom to roam forests and pastures - after all, Switzerland is otherwise known for its rigorous protection of private property. The right of roam is part of the Swiss understanding of forests and is culturally anchored. It would never seriously occur to anyone to demand its abolition. It is also a fact that the right to roam is gaining ground in Europe – even in the UK. All in all, there is a very high level of consensus in Switzerland regarding the right to roam, and some even speak of a fair distribution of property.

Figur 1: Relocation of a bench in Baden.

Picture: Baden municipal forestry office.

However, the right to roam has tangible disadvantages. Freedom to roam means that, on the one hand, the forest may be overused and, on the other hand, forest owners are less motivated to maintain and improve the forest and its infrastructure (Figure 1). If there is neither overuse nor do the forest and its trails require special maintenance, then free access is an economically efficient solution. This is probably the case in most Swiss forests. It should not be forgotten that although restricted access would bring advantages for forest owners, it would be costly to enforce. The high exclusion costs are probably one reason why forest owners accept the right to roam.

However, there are forests that are particularly interesting, beautiful or close to suburbs with many visitors and true hotspots. Every visitor to a popular forest has their own requirements. All in all, these many small demands and wishes accumulate. There is a high local impact on the forest, conflicts arise between the various stakeholder groups and the trail and visitor infrastructure is inadequate. And because there is no single owner of the right to roam, no one cares about resolving the conflicts or about maintaining and improving the forest and its visitor infrastructure. In economic terms, the freedom to roam in these forests is inefficient. Or to put it another way: many people would be better off with a more intelligent regulation of access rights.

An economically efficient solution would now be to abolish the right of roam locally. The forest owner could then fence off his forest, charge entry fees and make investments. However, such a demand would be tantamount to political suicide for a forest owners' association.

In view of this initial situation, there is clearly an irresolvable contradiction between fairness and efficiency. An efficient solution would be unjust for the vast majority of Swiss people, while a fair solution would mean overuse and undersupply of the hotspots. In the event of serious problems, only the authorities can currently intervene and, based on Art. 14 para. 2 or Art. 16 of the Federal Forest Act of October 4, 1991 (WaG; SR 921.0), issue a local ban under public law on undesirable or detrimental forest use.

At the interface between law and economics

«Only rarely are Property and Torts approached from a unified perspective». (Calabresi & Melamed 1972: 1089). Fortunately, we are no longer risking social peace because the contrast between justice and efficiency described above can be resolved. The basis for this is the economic analysis of law.[1] Calabresi & Melamed (1972) were influential because they uncovered surprising connections between property law and tort law. They succeeded in bringing them together with the introduction of transaction costs (Coase 1937). If such costs are taken into account, then the coexistence of property and liability rules can be explained.[2] In the transaction cost-free Stigler world, the two rules for the protection of property do not differ in terms of their allocative effect (cf. Hostettler 2010). But they do in the real Coase world, where, depending on the circumstances, sometimes property rules and sometimes liability rules lead to greater prosperity.

Suppose Calabresi and Melamed are neighbors and both have a large garden. When the weather is nice, Calabresi likes to lie in the garden at the weekend and read, while at the same time Melamed enjoys tending his garden with the help of small but noisy machines. One man's joy is another man's sorrow. But the municipality's building and environmental code is clear. Garden maintenance, including noisy work, is permitted on working days, but not on Sundays. As a result, the property rights are usually clearly allocated in Switzerland. On weekdays, everyone has the right to maintain their garden, with more or less noise (Rule 3; see also Table 1). On Sundays, however, the hobby gardener's hustle and bustle is restricted by Melamed and Rule 1 applies. In both cases, the respective property right, «make noise» or «get quiet», is enforced by the police if necessary.

However, there are always everyday situations in which, despite all caution and care, someone encroaches on someone else's property. If Calabresi parks his car carelessly and leaves a large dent in Melamed's car, he must take responsibility for the damage caused and reach an agreement with Melamed on compensation for the damage. And if they fail to reach an agreement, a judge will determine the compensation. Melamed's property is no longer protected in absolute terms, but by Calabresi's liability (rule 2).

It is therefore possible to distinguish between two fundamentally different instruments for the protection of property rights: Property rules and liability rules. The two classes of rules differ economically and in their definition:

- Property rights protected by property rules are exchanged voluntarily (rules 1 and 3). This is possible because property rights do not have the same value or the same opportunity costs for all people. The price P for the transfer of ownership results from the negotiations between buyer and seller.
- Property rights protected by liability rules are transferred involuntarily or unintentionally (rule 2). The amount of compensation or damages D is ultimately determined by a judge.

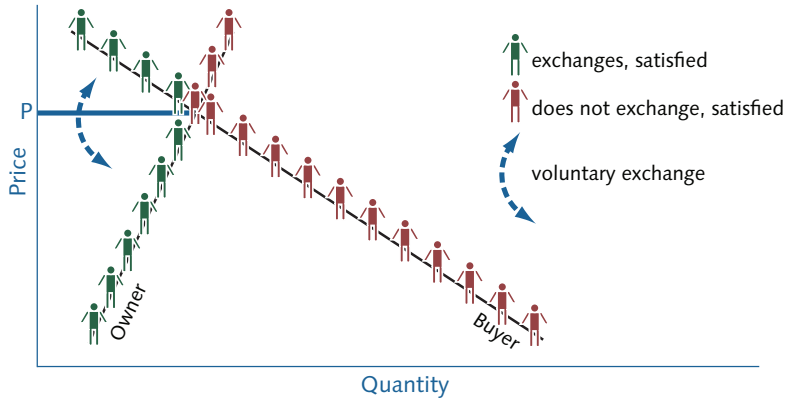
This can be illustrated by the two unorthodox price-quantity diagrams in Figures 2 and 3. In a voluntary exchange (Figure 2), ownership is transferred by mutual agreement – both parties must gain from the exchange. This is the case when the buyer estimates the value of the exchanged property right to be higher than the seller. In Figure 2, this means that the buyer must always be

1 Introductory Cooter & Ulen (2011).

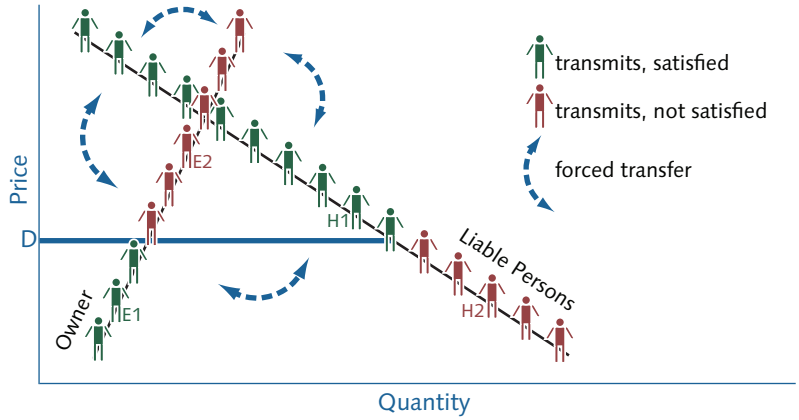
2 For a summary, see Krauss (2000).

positioned above the seller. In practice, many such exchanges lead to a market process in which a market-clearing price, a balance between demand and supply, is established. If such an equilibrium price results, then the potential buyers and sellers can be identified «exactly» as shown in Figure 2.

Figur 2: Voluntary exchange between seller and buyer (property rule). The exchange price P results from market supply and demand (market-clearing price). In principle, other exchange prices are also conceivable.



Figur 3: Forced transfer between owner and liable party (liability rule). The amount of damages D or compensation is determined by a judge, for example.



The situation is different with involuntary transfers (Figure 3). Because this transfer of property rights is consciously or unconsciously enforced, several constellations are possible. Perhaps Calabresi and Melamed are both dissatisfied (H2 harms E2, see Figure 3), perhaps both are satisfied (H1 harms E1). Or perhaps only Calabresi is satisfied and Melamed is dissatisfied (H1 damages E2) because he can no longer find suitable spare parts for his damaged classic car. Or Melamed is satisfied and Calabresi is dissatisfied (H2 damages E1) because, in his opinion, he has to pay far too much compensation for the dent in Melamed's rusty car. The subjectivity of costs and benefits no longer leads to a market process with individuals who are satisfied on all sides, but is the deeper reason for some of the dissatisfaction.

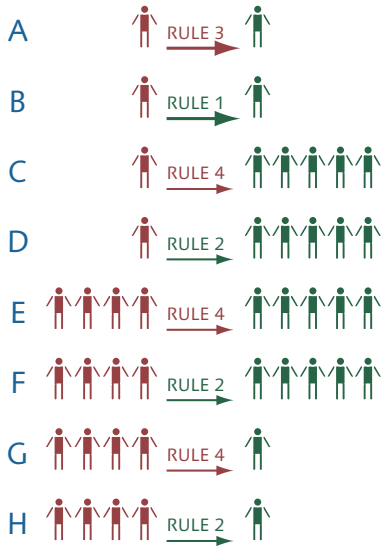
The coexistence of property and liability rules is, among other things, a consequence of different transaction costs (Figure 4). In road traffic, for example, contracts with every other road user are an impossibility. If an accident occurs, an official or judicial assessment of compensation (rule

2) is far more favorable than a prior voluntary agreement on the accident (rule 1). Calabresi and Melamed now recognized that, for reasons of symmetry, there must be a liability rule 4 in addition to the property rule 3 for permitted disturbances. However, because this rule was hardly noticed in everyday life, it initially met with great astonishment among lawyers.[3] Table 1 uses the forest to show what the four rules mean.

Table 1: Four different rules for the protection of property (Calabresi & Melamed 1972) using the example of a Swiss forest.

Entitlement	Property Rule	Liability Rule
to Receiver (disturbance not permitted)	**rule 1** trees and timber yield belong to the forest owner	**rule 2** liability for damage to trees (e.g. careless forest fire)
to Emitter (disturbance permitted)	**rule 3** right to roam according traditions (Art. 699 CC)	**rule 4** «willfully fencing in the forest»

Figur 4: Emitter (brown) and receivers (green) of disturbances. The color of the disturbance arrow shows the rights entitlement (brown for the emitter, green for the receiver). The eight cases A-H result from the combination of the number of exchange partners. Example: F shows the situation in road traffic. In view of the high transaction costs, the many potential parties responsible for and victims of accidents do not permit the conclusion of bilateral contracts ex ante. The protection of property by means of liability rules is more efficient.



Voluntary exchange works with low transaction costs (Coase 1960).
Example: Contract water supply with farmer (restriction on fertilization).

Voluntary exchange with low transaction costs often works (Coase 1960).
Example: Entrance fee to a rope park in the forest.

Permitted immissions of an industrial plant. The affected neighbors can enforce the closure of the factory against payment of compensation (see Spur v. Webb 1972).

Incident in a chemical factory with major property damage in the neighborhood. The factory is liable.

Damage to buildings due to diffuse air pollution. The property owner must accept the damage.

Road traffic: Liability after causing a traffic accident.

«Willfully fencing in the forest».

Unauthorized entry onto private property («trespassing»). A complaint to the judge will result in a fine for the trespasser.

Even more liability rules

Madeline Morris (1993) and other lawyers have further developed the four rules. Today, a distinction is made between simple and complex liability rules. The latter are characterized by the fact that one of the two exchange partners has a right of veto in the exchange process and the exchange process takes place in several stages. The simple rules, the number of which has now

3 The two jurists' essay became famous in part because their rule 4 was later actually applied in the judicial regulation of industrial pollutant emissions (Spur Industries v Del E Webb Development Co, 1972, 494 P.2d 700, Ariz Supreme Court).

risen to six, are also interesting. The two additional liability rules 5 and 6, also known as reverse liability, are easiest to explain using stock exchange jargon. While rules 2 and 4 are a call option, rules 5 and 6 are a put option. Ayres (2005) has clearly shown that all three newly discovered liability rules (4, 5, 6) have in fact been applied sporadically in everyday judicial practice for a long time.[4]

Table 2 explains what is meant by the six simple rules for the protection of property based on the right to enter the forest. Rule 3 corresponds to the current regulation under Art. 699 CC. Theoretically, five other rules can be derived. Rules 1 and 2 are likely to result in prohibitively high exclusion costs and are not very attractive. And, like Rule 6, they are politically unenforceable in Switzerland due to their redistributive effects. Rule 5 makes little sense in the case of forest access rights. Finally, Rule 4 is the subject of this essay.

Table 2: The six simple rules for the protection of property (Morris 1993, Ayres 2005) based on forest access.

Property Right	Property Rule	Liability Rule	
		Possibility to Buy «call option»	Possibility to Sell «put option»
no trespassing	rule 1 Visitors may not enter the forest without the permission of the forest owner.	rule 2 If the visitor enters the forest («trespassing»), he must compensate the forest owner in accordance with judicial requirements.	rule 6 The forest owner may enforce the entry of the visitor and the compensation determined by the court.
freedom to roam	rule 3 Visitors may enter the forest. The forest owner may be able to buy the right to roam from visitors.	rule4 The forest owner may enforce the right to exclude the forest visitor in return for an ordered compensation.	rule 5 The forest visitor can enforce his exclusion and his (judicially determined) compensation.

Deliberately fencing off his forest

So let's imagine that Swiss law no longer protects trespassing in the forest with the property rule 3, but with the weakened liability rule 4. What would be the consequences? A forest owner fences off his forest. He is sued for damages as a result. He pays and with the payment has bought the right to exclude visitors from his forest property or to allow visitors to enter for an entrance fee. In order for this to actually work, a framework is required.

- The «fenced» areas have a minimum size (e.g. 50 ha). The boundary must be easy to understand for forest visitors.
- Physical fencing of the forest is prohibited.
- The forest owner shall publish the restricted access to the forest and signpost it with information boards. He sets up machines for the purchase of entrance tickets and reports offenses himself. An association with other forest owners to jointly market the recreational offer is probably also useful. In North America, for example, such passes are widespread. In Swit-

4 For example, Art. 6 para. 4 of the Bernese Forest Act of May 5, 1997 (BSG 921.11) corresponds to Rule 6: If the special management regulations are tantamount to expropriation, the affected party may demand that the canton take over the property in accordance with the provisions of expropriation law.

zerland, we also have passes that entitle the holder to cross-country skiing on certain trails. These work on the same principle.

- To reduce transaction costs, only the local municipality is admitted as a plaintiff. However, in order to save court costs, it first tries to negotiate a voluntary agreement with the forest owner. Alternatively, instead of a judicial determination of the annual compensation, an administrative procedure is automatically initiated against the forest owner by the cantonal forest authority after the public announcement of the restricted access to the forest. Appraisal commissions or judges only come into play in the second or third instance. In this variant, too, the compensation flows into the coffers of the local community. In fact, it is difficult to say from the outset how much forest and which forest would be affected. Because the damage to the general public resulting from the access restriction would be greater for the interesting, beautiful forests or forests close to suburbs than for the other forests, it cannot be assumed that only these hotspots would be affected. For these, the forest owner would have to pay a higher compensation. Therefore, each forest owner would estimate the compensation, maintenance, investments and enforcement costs, as well as the income earned from entry fees, on a case-by-case basis.

Outlook

Rule 4 for the individual rejection of permitted disturbances is not a universal remedy. Mises (1920, 1922) already drew attention to a problem with his impetus for the socialist calculation debate: the compensation paid under Rule 4 is not the result of a voluntary exchange and therefore only reflects the subjective benefit of forest visitors to a limited extent. And for the liberal jurist Epstein (1997), Rule 4 undermines the very foundation of a complex social order because it constantly calls into question the stability of property and thus people's personal plans. In particular, it encourages takings through regulation.

Rule 4 is increasingly common in public law (Melamed 1997). In Switzerland, for example, Rule 4 applies wherever compensation within the meaning of Art. 3 para. 2 of the Federal Subsidy Act of October 5, 1990 (SR 616.1) is not based on genuine voluntariness or where there is a threat of state enforcement. The outlined solution for the local transfer of the right to enter forests is therefore not alien to the Swiss forestry and agriculture system - for once, however, it increases the forest owners' scope for action. It also offers two advantages: The local communities (and thus the local population) are compensated for the cancellation of the right to roam, and the redistributive effects are reduced. At the same time, both overexploitation and the undersupply of infrastructure at the hotspots are reduced. Forest owners benefit financially and forest visitors benefit from tangible improvements. Nevertheless, protected forest access under Rule 4 is likely to encounter political difficulties. It is new, does not fit easily into the Swiss legal system and requires an amendment to the Swiss Civil Code (Art. 699) and the Forest Act (Art. 14 para. 1).

Deegen (2012, this issue) outlines a constructive approach by pointing to the simultaneous occurrence of different rules. Deegen refrains from preventive constructivist legislation by the state, but leaves the actors sufficient room for maneuver to try out new solutions and allows them – in the spirit of Coase – to test alternatives and sometimes negotiate with each other. This approach is evolutionary, pragmatic and «buttom-up». It puts the current definition of detrimental use (Art. 16 WaG) up for discussion and experiments with other possible allocation mechanisms such as access bans, state entry fees, fence permits, subsidies, visitor guidance, maintenance

contracts with the local community or user restrictions based on the «first come, first served» principle. Perhaps it would not even come to the point of restricting free access to certain forests. As mentioned, local communities would have incentives to voluntarily compensate forest owners – but here we are already entering the world of complex, multi-level liability rules (Ayres 2005). Would it perhaps even be possible to find a rule that is administratively even simpler than Rule 4 and capable of consensus?

Deegen (2012, this issue) shows the way in which new rules must be tested in reality for their usefulness and political acceptance and must prove themselves. It seems to me that liability rules are a promising solution to the problem of forest access. Their strengths lie in the combination of efficiency and fairness objectives and in the comparatively good processing of the subjective benefits and costs of forest owners and the local population. Therefore: the proof of the pudding is in the eating!

References

Ayres I (2005) Optional Law: The Structure of Legal Entitlements. Chicago: Univ Chicago Press. 284 p.

Calabresi G, Melamed AD (1972) Property rules, liability rules, and inalienability: One view of the cathedral. Harvard Law Rev 85: 1089–1128.

Coase RH (1937) The nature of the firm. Economica 4: 386–405.

Coase RH (1960) The problem of social cost. J Law Econ 3: 1–44.

Cooter R, Ulen T (2011) Law and Economics. Boston: Pearson Addison Wesley. 6 ed. 576 p.

Deegen (2012) Die Allokation der Waldbetretung, ein Beispiel für das Problem gesellschaftlicher Kosten (Essay). In diesem Heft. doi: 10.3188/szf.2012.0xxx

Epstein PR (1997) A clear view of the cathedral: the dominance of property rules. Yale Law J 106: 2091–2120.

Hostettler M (2010) Geblendet vom Feuerwerk – Der Beitrag von Coase über Umweltnutzungskonflikte. Schweiz Z Forstwes 161: 135–146. doi: 10.3188/szf.2010.0135

Krauss MI (2000) Property rules vs. liability rules. In: Bouckaert B, de Geest G, editors. Encyclopedia of Law and Economics II: Civil Law and Economics. Cheltenham: Edward Elgar. pp. 782–794.

Melamed AD (1997) Remarks: A public law perspective. Yale Law J 106: 2209–2213.

Mises L (1920) Die Wirtschaftsrechnung im sozialistischen Gemeinwesen. Arch Sozialwissenschaft Sozialpolitik 47: 86–121.

Mises L (1922) Die Gemeinwirtschaft: Untersuchungen über den Sozialismus. Jena: Gustav Fischer. 502 p.

Morris M (1993) The structure of entitlements. Cornell L Rev 78: 822–898.