

# Evolutionary Law and Economics

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## Where Do We Stand? Where Should We Go?

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*Very preliminary and partly incomplete version (sorry)*

It is now 30 years ago that Paul Rubin and George Priest have published their seminal papers on “Why is the Common Law Efficient?”. Since then a large number of papers have been written from an economic perspective on how the Common Law, and how statutory law, evolves. There has been a substantial amount of interaction with evolutionary economics, but the field of evolutionary law and economics still remains much narrower than evolutionary economics. Both positive economic research on evolving systems and normative economic studies on the evolution of spontaneous orders have fertilized similar arguments in law and economics. However, evolutionary law and economics has never reached the width and depth of the evolutionary economics approach (which, due to its diversity, should perhaps be better only mentioned in its plural form). In this paper I will give an overview on the field of evolutionary law and economics as it has evolved itself over the last three decades and as one might expect further insights from more research.

I will start my review with the positive theoretical evolutionary approaches we find in law and economics (section 1). The interaction of law and social norms deserves an own section (section 2) as much as does the idea of competing legal orders (section 3). In particular in the discussion of this last idea, normative perspectives are prevalent. I therefore consider a number of normative questions in the last section (section 4) before the conclusions (section 5). In each section, I will raise both leading questions of this paper: Where do we stand? and Where should we go?

## 1) Positive Theoretical Approaches

### *a) Property Rights Evolving Efficiently*

The first evolutionary ideas about legal change have been raised long before Rubin’s and Priest’s articles. The first paper to deal with substantive arguments on how actually existing legal orders change was the one by Harold Demsetz on the evolution of property rights regimes. First published in 1967 the idea was more detailed and to some degree modified in 2002. The basic idea is closely related to Alchian’s (1950) optimistic account of behavioural evolution: societies tend to have institutions which reflect, and are adapted to, the current needs of this society, given their environment and their preferences. If they were not having such institutions, they would not survive in the long run. Consequentially, if preferences or, more interestingly, the environment of a society changes, so will its institutions, legal or not.

Demsetz supports his argument with an empirical example. The Labrador Indians switched from open access property rights regimes to private property when fur trade made hunting beavers and XYXY more valuable to each hunter so that the natural setting could not sustain the radically increased burden resulting from consequentially increased hunting

activities. In his reappraising paper twenty five years later, Demsetz conditions his argument on a number of conditions, which have to be satisfied to make environmental changes induce optimal institutional adaptations. In particular, he argues that ...

Independently of whether one wants to label the functionalist Demsetzian approach as truly evolutionary or not, the basic idea persists in many other publications. The argument lacks, however, any causal explanation for why the institutions change. There is no discussion of how rules in simple society are made, nor is there any hint to legislators' incentives when more complex societies are discussed (mainly in the 2002 paper). Many authors like Witt (1987a), Banner (2002), Eggertson (1990: 247–80) and Anderson and Hill (1975, 2002) have noted this pitfall of Demsetz's approach. The idea has been taken up by scholars like Umbeck (1977a, 1977b), Ellickson (1991, 1994), Anderson and Hill (1975 and 2002) who have argued that societies self-organize and develop property rights, when law does not exist or is not enforced (prominent examples are farmer-ranger conflicts in Shasta County, mining claims during the California gold rush, Maine lobster fishing grounds, and grazing areas at the American Western frontier in the second half of the nineteenth century). More importantly, these authors provide further examples for evolving property rights systems, which all are explained by the Demsetzian hypothesis, though only as a necessary condition for institutional change. However, practically all of the descriptions of how property rights evolved when the Demsetzian efficiency condition was satisfied, also include the causal aspect: some individuals find it privately worthwhile to design and enforce property rights against infringing group members or outsiders. Not all examples have remained undisputed. Clay and Wright (2005) for example, challenge Umbeck's observations on mining district codes producing order. They argue that the mining district codes gave equal attention to the rights of claim-jumpers as to claim holders, whence chronic insecurity and litigation resulted.

Most of this literature has a clear normative agenda: to show whether or – more frequently – *that* property rights evolving without government's interference are at least as good as property rights designed by governments (or courts). Therefore, they concentrate on historical or very specific contemporary cases, where governments or courts to shape the law are absent. While this is most relevant for understanding where the current property right systems may find their roots, such research does not tell us much about how law evolves in current times in developed countries. The next three subsections describe theories of legal evolution which takes place within existing states.

### ***b) Demand-side approaches***

In contrast to the functionalist approach causal explanations of why, how and to where the law evolves have emerged in the literature during the last thirty years. This and the following three subsections order the causal explanations by the variables which are taken as endogenous and thus evolving. This subsection contains an overview of the models which envisage the evolution as (mainly) demand-side driven, while the next subsection deals with supply-side driven models. I will then take a brief look at approaches which combine the two driving forces. While all models described in these three subsections take the interest in changing law as given, the subsequent subsection takes a look at models in which the law co-evolves with interests in its change. The last subsection of this section looks at alternative variables describing the law: while most authors look at the efficiency of the law or particular legal rules, some authors offer alternatives like how much the law regulates, how much it impedes innovation, or how much it protects from discrimination.

The seminal pair of papers by Paul Rubin (1977) and George Priest (1977) constitute the root of a long history of publications on the evolution of the common law, i.e. judge-made law. Rubin's central argument was that legal rules will be challenged in court only if they are

inefficient. If rules are efficient, all cases will be solved by settlement to avoid litigation costs. The possibility of replacing an inefficient rule by an efficient one, however, allows for enough joint expected future gains from having a better rule to outweigh the litigation costs. As a consequence, so goes Rubin's argument, the common law evolves towards efficiency.

Priest's (1977) formalization of the argument showed its validity only for the cases of sufficiently large joint expected future gains from having a better rule and under the condition that both parties of the legal conflict dealt with by the legal rule value future gains and losses equally strongly. If only one party cares for the future while the other does not, typically because the former encounters relevant conflicts over and over again while for the latter the conflict is but a unique incident, then the path of legal evolution only depends on the future gains and losses of the former and therefore legal rules will be challenged not if they are inefficient, but rather when they are to the disadvantage of the party with the stronger interest in the future of the rule.

The argument has been taken up and refined by a large number of later authors, for example by Cooter and Kornhauser (1980), Terrebonne (1981), and Schäfer and Ott (1997), to name only a few. Cooter and Kornhauser (1980) dwell on the probabilistic aspects of a slightly varied model which, as they show, is a Markov chain model. Assuming a large number of possible alternative legal rules, they demonstrate that equal interests in the future result *on average* in a rather high degree of efficiency, but neither is the most efficient rule the end of all evolution nor is there eternal stability of any other rule. On the contrary, except for rather restrictive assumptions, all alternative rules will become valid from time to time again, if only for a short time. In other words, the concept of stationary distributions of valid legal rules replaces the concept of the equilibrium rule. Terrebonne (1981) aims at reproducing Rubin's and Priest's results without settlement due to very high transaction costs. His argument however fails for cases in which the probability of a plaintiff to sue successfully is very small although the defendant's cost of care are smaller than its expected reduction in damages. Schäfer and Ott (1997) discuss a Markov-chain model of the evolution of liability standards similar to the one of Cooter and Kornhauser (1980), though with strictly positive transition probabilities only for transitions to more efficient standards. As one would expect from the aforesaid, they show that the judicial process evolves toward the most efficient standard.

It is somewhat surprising that (lawyer-)economists have taken the evolutionary perspective to the law nearly exclusively when considering judge-made law. When it comes to legislated law, most economists rely on static Public Choice models, either in the Stigler-Peltzman tradition of regulators aiming at satisfying the interests of competing interest groups in the way which is most beneficial to the regulators (Stigler 1971, Peltzman 1976), or in the Buchanan-Tullock tradition of rent-seeking (see e.g. Tollison, 1982, for an overview on the early literature). Given that these approaches stress the influence of particular interest groups on – not the evolution but – the content of law, many authors have claimed that the common law due to its reliance on the evolutionary process of courts making the law is more efficient than the civil law in which the negative effects described by the theory of political economy gain full force [add references here!!]. A notable early exception of this unequal way of approaching legal change when it is installed by courts or legislators is Gary Becker's (1983) theory of competing pressure groups. He is as optimistic with respect to legislated legal evolution as others are for judge-made law. [Add another or two authors who take an evolutionary view to Public Choice.]

Not only did scholars of legislated law rarely adapt an evolutionary approach similar to the Rubin-Priest model (I mentioned Becker, 1983, as an exception) but also adaptations of the standard assumptions of Public Choice models in arguments on common law evolution is an exception: courts as law makers are usually modeled as random decision makers whose

decision probabilities are independent of what the parties spend to influence them. This is obviously in stark contradiction to what is assumed about political law makers, where the standard assumption is that they are widely susceptible to influences by pressure groups. Goodman (1978) is one of the few who make the courts' decisions depend on what the parties invest to influence them, and he does so in a way which is very similar to the standard rent-seeking game. Using this idea in a model of judicial precedent, he shows that this may also lead the common law towards efficiency, though only under stronger conditions than those typical for the Rubin-Priest model. In particular, so goes his argument, legal precedents may induce a detrimental path dependency: even if the gains from moving to an efficient rule far outweigh the losses of its opponents, legal precedent may make the probability of a party benefiting from the efficient rule so small, that the inefficient precedent will never be challenged in court.

Georgakopoulos (1997) takes a somewhat different but still evolutionary view on the comparison of the efficiency of judge-made and legislated law. Assuming that the theoretically efficient content of the law changes constantly over time (Georgakopoulos assumes directed Brownian motion), he argues that legislators adapt the law to this perfect content in one big step once the distance between the currently valid law and the ideal exceeds some threshold. The legislator does so, independently of whether the currently valid law remains unchanged between these leaps – as would be the case for the archetypal civil law – or constantly, but incompletely adapts towards the ideal law – as would be the case for archetypal common law. In his paper, Georgakopoulos shows that under these circumstances, the average distance between the currently valid law and its ideal is the same for common and civil law, if the deterministic part of the change of the theoretically efficient content of the law is linear. It is however smaller (larger) for the common law, if deterministic part implies change at an increasing (decreasing) rate. It is interesting to note that this result is independent of how much the change of the common law falls short of the change of the ideal law, as long as it does change at a slower pace than the ideal law.

The superiority of the common law is, however, does not find unanimous support. Paul Rubin (1982) was one of the first to caution that any observed efficiency advantage of common law over statutory law might be a historical accident. Hatzis (2002) makes use of an example, *viz.* how the legal systems deal with liquidated damages, to prove that the common law may also be inferior in some cases, even when there are no reasons to assume differences in the interests of parties about the valid rules of the future. Fon and Parisi (2003) argue that legal evolution is not so much toward efficiency, but rather toward the interests of the typical plaintiff, an argument which is in direct opposition to the results implied by the model of Terrebonne (1981) which predicts evolution towards efficiency unless the law strongly disfavors the plaintiff. Arrunada and Andonova (2004a, 2004b) refer to the empirical observation that the common law obviously failed to show its superiority in its competition with the civil law, when nearly all central and Eastern European transition countries opted for a civil law system and against common law.

Rubin, Curran and Curran (2001) and Osborne (2002) do not take the degree to which a legal system is driven by judge-made or by legislated law as given, but rather allow rent-seekers to affect the relative weight of the two sources of law by allocating their activity between the legislator and the courts. While these authors are able to derive equilibria, their insights on direction of the evolution of law is ambiguous, respectively un-discussed.

### ***c) Supply-side approaches***

Not all scholars of the evolution of the common law have concentrated on the demand side. While demand side approaches are clearly more frequent, the supply side did not remain

uninvestigated. Landes and Posner (1976) built their argument on the assumption that judges are interested in efficient law, but that their reputation for not contradicting precedents may curb their private preferences concerning good law substantially. Miceli and Cosgel (1994) extend this idea by arguing that the decision to rule against a precedent is not necessarily a cost to judges. Rather, they argue, it is a decision under risk, since every deviation from an existing precedent may become the foundation for a new precedent – and being the founder of a new precedent is extremely valuable for a judge's reputation. Wangenheim (1993, 1995) argues along similar lines but lets the reputation effect of being the founding father of a new precedent depend on the frequency of judges he thinks might follow him in a non-linear way: laying grounds for a new precedent increases a judge's reputation far stronger, if he succeeds to do so against a large majority. While Miceli and Cosgel find a unique interior equilibrium of the proportion of judges following a precedent to which the common law evolves, Wangenheim's model allows for multiple equilibria.

Whitman (2000) further studies the model of Miceli and Cosgel (1994) to find that transition probabilities from one rule to another may remain strictly positive, implying that there is constant variation of the rule and the proportion of judges deciding accordingly around one or several equilibria. The variation he finds is the very same which Cooter and Kornhauser (1980) stress as a consequence of any Markov-chain modeling with strictly positive transition probabilities.

Without specific assumptions on judges' preferences which clearly drive the result, supply side models of the evolution of the common law fail to predict whether the common law evolves towards efficiency or not. As a consequence, the few existing models which join the supply and the demand side (e.g. Whitman, 2000, goes in this direction towards the end of his paper) do not provide substantially more insights on the direction of the evolution of the law than do simple demand side models.

#### ***d) Law's Effect on Technological Evolution***

Insights from joining the demand and supply forces driving the evolution of the law are however much larger, if one takes into account that evolving law does not only alters the constraints of behavior, but also channels innovation (Witt 1987b) and affects the individuals' interests in changing the law. With such feedback loops, the evolution of law may lose its clear direction beyond what Cooter and Kornhauser (1980) and Whitman (2000) have attributed to stochasticity in legal evolution. Interestingly enough, none of the few authors who have attempted dealing with such feedback loops studies the degree of efficiency as evolving property of the law but rather the degree to which the law regulates and hinders innovation or fights discrimination. Lee (1991), Woekener (1993), Wangenheim (1993, 1995) study the evolution of how much the law regulates and how this interacts with the evolution of the innovativeness of entrepreneurs. Lee's approach is very much in the tradition of the standard Lotka-Volterra model and results in a unique stable equilibrium of the co-evolution of regulation and innovativeness. To reach this stability, Lee has to assume that competing entrepreneurs hamper each other's innovativeness – an assumption which is in stark contrast to usual ideas about competition and entrepreneurial innovativeness. Woekener gives up this restriction and in consequence finds that the equilibrium need not be unique nor stable. Besides path dependencies resulting from multiple equilibria, attracting limit cycles of oscillating degrees of regulation and innovativeness may emerge from his model. Wangenheim shows an even richer set of possible attractors. Both Woekener and Wangenheim rely on a micro-foundation of their macroscopic equations of motion. However, Wangenheim's model refers more to the demand and supply side approaches to legal evolution discussed above than Woekener does who exclusively relies on models from political economy.

More of these co-evolutionary analyses would be needed to better understand what affects the evolution of law and how the law in turn affects these very sources of its own evolution. In particular, further research should focus on efficiency as the evolving aspect of law to complement the degree of regulation. Obviously, when law induces technological change, the concept of efficiency has to be adapted, since static efficiency changes when technology changes. Only with such dynamic concept of efficiency would it be possible to use the evolutionary models described before to study the evolutionary interaction between law and technology. Based on such co-evolutionary models, it might be possible to find a new comparison of the relative efficiency of common and civil law, perhaps building on Georgakopoulos' (1997) model with its exogenously given change of what is efficient.

To judge the validity of all the models discussed in the previous section, large numbers of case studies or econometric studies would be needed – only few exist. To be aware, we do not need econometric studies of how efficient the law currently is or was at some given point in time. Two examples of such studies are the one by Pistor et al. (2003) who study the change of corporate law and Eckardt (2001) who gives an overview on how German tort law, in particular accident law co-evolved with various technologies. This naming of only two examples may miss others, but to my impression more fields of law could be studied in much detail and perhaps also in a comparative way to observe how the co-evolution of law, technology and efficiency may be path-dependent. Incorporating the evolution of social norms, to be discussed in the next section, would complete the image, but would probably be too large a task to fulfill.

## **2) Law and Social Norms (Informal Institutions)**

When talking about evolution and law, one should not restrict the presentation of ideas to the evolution of law (and, as has been stressed in the previous section, its co-evolution with the interests in changing the law) but also on other norms, in particular social norms, for which evolution seems to be even more important than for legal norms. In this section, I will therefore start with a brief account of the evolution of norm system outside and independent of the law. As one may question with good reasons that this topic still belongs to evolutionary *law* and economics, I will then quickly turn to the evolutionary interaction of law and social norms. Since this branch of literature is substantially smaller than branch discussed in the previous section, more (relative) weight will be put on the question: where should we go?

Before starting the overview on some important publications, I have to stress that I will use the terms social norms, social institutions, informal norms and informal institutions in a lax way and will not differentiate between them.

### **a) Alternative Norm Systems**

Many of the authors referred to in section 1)a) have stressed the self-organizing forces of societies, when law does not exist or is not enforced. However, in most of their examples, the alternative norm system is actually enforced not only within the community but also against strangers. (This is a necessary condition for these norms being solutions to any problems.) Then the difference between such rules and law is merely semantic, which becomes most obvious when these norms are named property *rights*. Nevertheless, it may be helpful to make this distinction, when one studies the interaction between legislated or judge-made law and these other norm systems.

Such alternative norm systems with rather strongly organized enforcement devices are not restricted to property rights. Cooter (1994) discusses the *lex mercatoria* as an example for a set of rules which enforces and regulates contracts between merchants although they are not subject to any common state jurisdiction. *Lex mercatoria* evolved spontaneously, i.e. without

design or enforcement by governments and is clearly enforced by all merchants. Cooter argues that one may expect this set of norms to be efficient because they evolved in a framework which should tend toward efficiency. In a similar vein, Clay (1997) describes merchants in California who did trade long before any state was established in the area. Again, the enforcement mechanism of norms, in particular performance of long distance contracts, was punishment by the group of merchants. In this case, however, the institutions securing trade eventually broke down because in-group relationships became weaker due to a combination of new merchants and a substantial decline in consumer demand due to the Gold rush.

Moving further from non-legal rules enforced by other enforcement organizations over rules enforced by all members of a small group we turn to social norms as rules being enforced socially and in a large society. Such social norms and their evolution have been widely discussed in economics, but mainly for very simple situations with only two alternative behaviors of which one becomes a social norm (see for example the overview articles by Ostrom, 2000, and Elster, 1989, as well as the seminal paper by Ullman-Margalit). It is not in the scope of this paper to discuss these theories in detail. What is interesting here, is how they interact with law and legal evolution.

This is what I will aim at in the following subsections not only for social norms in this narrow sense, but also for the contract rules discussed before and to some degree also for the property rules. For simplicity, I will combine all these alternative norm systems under the label “social norms”.

### ***b) Influence of Social Norms on Law and Reverse?***

Obviously, interaction between social norms and the law is not uni-directional. Social norms may have an influence on how law-makers decide, be they legislators or judges, but also will law have (or at least try to have) an influence on social norms. I will start with the influence of social norms on law and then turn to the reverse influence.

The influence of social norms on law has been discussed from a positive perspective only to a limited extent in the literature. Obviously, it goes without saying that social norms – if they exist – influence law-makers, be they legislators or be they judges, in their decision-making. In his article on the “New Law Merchant”, Cooter (1994) gives some examples how judges deduce the law they impose by their decisions from their observations of social norms in the relevant sub-population. One finds more literature in this direction, but there seems to lack a clear theory of how social norms influence such decisions. One of the reasons may be that the concept of social norms is defined only up to a relatively large degree of vagueness.

More has been said on the subject from a normative perspective. Not the least Cooter (1994) himself uses the positive description mainly as a starting point for his normative argument that courts should, under certain conditions, draw the rules they use to adjudicate and thereby transform into law from the social norms. The conditions ensure to his opinion that social norms tend to be efficient: social norms should be generally accepted inside the group, should not serve to extract welfare from outsiders, and should not be the expression of an inefficient evolutionary lock-in. The last condition casts doubts on the practicability of the idea, since it requires that the courts are able to identify inefficient rules, an ability which would make reliance on social norms as a guide unnecessary. Kraus (1997) adds as condition that the evolutionary process of social norms should be fast enough which it need not be: it might be that technological evolution is so fast that the cultural evolution of social norms cannot keep pace with it. Then social norms will not be efficient. Cooter (1994) was not the first to argue in this direction. Hayek (LLL) argues the same, though with weaker conditions.

That social norms influence the change of law has also been widely discussed in the literature on transplanting legal systems or parts thereof to other jurisdictions, the most prominent examples being less developed countries or historical cases (North 1990). Here the argument goes that social norms do not drive legal change but they may substantially hamper it. If transplanted law deviates too much from social norms, then experience shows that the law may not become effective, most social behavior (often including market behavior) will remain under the guidance and control of social norms rather than the law.

Carbonara and Pasotti (2004) take yet another approach to the interaction between social norms and law. In a model describing the co-evolution of discrimination and struggles to be protected from discrimination, they employ social norms and the law as tools to discriminate and to protect from discrimination. However, their model is not very explicit on how legal rules are shaped in this process.

The reverse influence, that is the one that the law has on social norms, has also been studied by too few law-and-economics authors to expect anything of profound knowledge in the field. A prominent starting point for the discussion is Cooter's (1998) article on expressive law and economics. He argues that the evolution of social norms may have multiple attractors and that the law may guide social-norm evolution to one or the other. Up to this point, Cooter's argument is not much beyond what Schelling said in his 19XX book. However, Cooter goes further. By a model similar to the one by Kuran (1989) on the sudden revolutions in Eastern Europe, he shows that a change in legal rules may express (whence the name of his theory) that enough individuals in society favor the new rule to make them law. Even if this law is not enforced, this may tip some individuals' opinion on what social norm they think to be just, which in turn provides new information for yet further individuals who were close to changing their minds on what social norm to adhere to. Like an avalanche, this may trigger more and more individuals to change their minds on social norms so that the new norm may become widely accepted.

Parisi and Wangenheim (2006) have further developed this argument. They show in an interactive opinion formation model that law may not only trigger the evolution of social norms in the same direction as the law goes but also in the reverse direction. This may particularly occur, when legal change is too far from social norms and thus triggers hidden or open opposition. They also show that legal strategies like front-loading the enforcement of legal rules may avoid such countervailing effect, possibly only at high costs, though.

Further studies in this direction are needed. In particular, research should overcome the very simple way to model social norms in two-by-two games, since this rarely catches the complexity of legal rules which typically have to draw borders in a much wider action space. In addition, social norms must be described by more than one dimension: to understand how they work and how they are influenced by the law, researchers should not only consider their content but also how strongly they are sanctioned by members of the society. Finally, an individual may adopt two different social norms: one for guiding his or her own behavior (then one could talk of internalized norms) and another for sanctioning other individuals' behavior. In our aforementioned study, Parisi and Wangenheim (2006) make first steps in widening the range of possible social norms, but the other steps are still completely open to research. Such research seems to be particularly promising if one understands that legal rules rarely affect individual behavior directly: hardly anybody knows exactly what the legal rules are. Only when these rules are transformed in social norms as a reflex of perceived legal norms, legal norms will become effective.

Having read about the influence of social norms on the law and the reverse influence of the law on social norms, one would expect a discussion of feedback loops between the two norm systems. However, there is still a long way to go. Only after understanding more on the



evolution of social norms in all their complexity of wide possible contents and of at least two dimensions (content and degree of sanctioning, perhaps also internalization) would it make sense to tackle the feedback loops. But as a goal in the long run, one should keep their scientific investigation in mind.

### **3) Competing Jurisdictions**

(to be worked out later)

### **4) Normative Questions**

#### ***a) Hayekian***

- supported by demand-side approaches claiming superiority of common law
- retreat from social engineering
- problem:
  - either have to base normative criteria exclusively on process
  - or provide clear normative criteria on outcome of evolution, at least on a theoretical basis
    - which process tends to best *results*?
    - (not a contradiction, but a problem)

#### ***b) Cooter (again 1994)***

#### ***c) Normative basis 1: evolving preferences for goods***

- stable preferences versus evolving preferences (long discussion, first peak in early 1950's, then further papers now and then, picked up again by CC von Weizsäcker 1971, 2002 and 2005 (mimeo))
- no particular problem: individuals being replaced by others with different but stable preferences
- problem: intraindividually evolving preferences: internal contraction of preferences à la Scitovsky
- Weizsäcker's solution: restrict preference evolution to adaptive preferences

#### ***d) Normative basis 2: include justice preferences***

- preferences on justice and other aspects of society are preferences as any preference for goods.
- Hence: include them in welfare criterion
- Note that these preferences may change as much as preferences for goods.

#### ***e) further normative problems***

- normative criteria:
  - purely outcome oriented
  - purely process oriented

- oriented on process which yields best outcome
- problems:
  - pure process: emergency breaks
  - process *cum* outcome: see above
  - pure outcome: predicting evolution??

## 5) Conclusions

- approaches based on fixed technology and preferences (demand or supply based) in dead end road, superiority of common law will remain ambiguous
- need more approaches with true feedback loops between law and technology, preferences and social norms
- need deeper analysis of social norms
- need normative criteria for evolutionary setting:
  - process oriented, but outcome based
  - include ‘justice preferences’

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