

FEEDBACK IN LEGAL REASONING AND  
RULE SYSTEMS

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## 1. INTRODUCTION

The concept of “feedback”, originally developed within cybernetics,<sup>1</sup> is nowadays extensively used in various natural sciences and in technology as well as in the social sciences. It contributes, among other things, to our understanding of the various types of self-regulation in biological, ecological and social systems (“homeostasis”, “ecological balance” and “market mechanisms”, etc.). Utilization of feedback processes is also the basis for most modern automation techniques. We find these processes used both in stabilizing mechanisms (e.g. the thermostat) and in goal-seeking “servo-mechanisms” (e.g. automatically controlled missiles). A good introduction to general feedback theory is given by Jay W. Forrester, *Principles of Systems* (2nd edition, Cambridge Mass. 1971).

Feedback processes may be found in all kinds of systems which are dynamic and open. By “system” I mean a set of elements and relations which together form a structured whole. For example, an engine is a system of cylinders, pistons, tubes and wires, etc. In the same way society may be seen as a system of individuals, the law as a system of rules and activities, a piece of reasoning as a system of arguments, and so on. By “open” systems I mean those that receive inputs from their surroundings and produce outputs. And “feedback” is the effect that the outputs may have on future inputs and thereby also on future outputs, as is illustrated in Fig. 1.

Usually we distinguish between two types of feedback, namely “positive” (or “tendency-reinforcing”) and “negative” (or “self-regulating”) feedback. The two types may be combined in different ways, but I would first mention a few clear cases of each type.

*Positive feedback* occurs when, for example, a population increases. The more children born in one generation, the more people there will be who may have children in the following generation. Growth contributes to an increase in growth, and that increase in turn contributes to a further increase, and so on. There is, in other words, a *reinforcing tendency*. A similar situation may arise in the case of a prospering industrial concern.

<sup>1</sup> Cf. Norbert Wiener, *Cybernetics*, Cambridge Mass. 1948, 2nd ed. 1961.

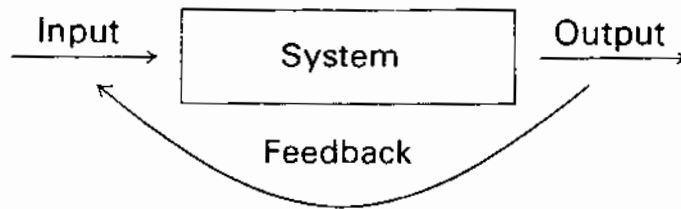


Figure 1

The more products sold, the greater will be the profit, and the larger the investment in new production equipment, which in its turn can contribute to a further increase in turnover. Fires that spread and the chain reaction started by the splitting of atoms are other illustrative examples.

The self-reinforcing tendencies called “vicious circles” may also serve as examples. Let us take a minority group against which people are prejudiced, e.g. negroes in the Southern States of the USA. The blacks were considered stupid and lazy. This resulted in poorer schooling and job opportunities than were available to others, thereby making them less competent and less successful. In this way prejudice was fed, leading to increased discrimination. Or we can imagine an arms race between two power blocks who fear each other. The fact that one block increases its defences to increase its safety may cause the other block to consider *its* safety threatened and to increase *its* defences; this in turn leads to increased fear on the part of the first block and is reciprocated by a further increase in its defences, and so on. As these examples show, positive feedback is characterized by the fact that changes create a tendency to new changes in the *same* direction.

With *negative feedback* the opposite happens. If something increases beyond a certain level, the feedback will cause a decrease. And if it decreases below a certain level, the feedback will cause an increase. The system is thus characterized by continual small oscillations around a point of balance (or around a movable goal, cf. below). A thermostatically controlled heating system may serve as an example. When the temperature in the room exceeds a certain level (e.g. 22°C) the thermostat sends an impulse which leads to a reduced input of fuel so that after a while the temperature falls. If, on the other hand, the temperature falls below a predetermined minimum value (e.g. 20°C) the thermostat will ensure that the input of fuel increases so that there will be more heat. In this way the room temperature is stabilized. Variation is allowed only within relatively narrow limits which are conditioned by the construction of the heating system and the adjustment of the thermostat.

All negative feedback has one thing in common, viz. that it makes the

system *self-regulative*. Often this regulating consists of keeping a state in the system approximately constant in spite of varying outside influences. For example, the thermostat ensures that there is a relatively stable room temperature in spite of variations in the outside temperature. In other cases the purpose is to make the system adjust itself as closely as possible in accordance with an external variable. An automatically controlled air-defence gun or rocket which follows the planes' movements is an example of this. We call the former mechanisms "stabilizing" and the latter "goal-directed". In both cases there are devices (or sense organs) which register the state of the system at any given time and which take care that opposing forces are brought into effect whenever a tendency to deviate from the desired state or predetermined goal is registered. A self-regulating system is characterized, therefore, by a continual oscillation between deviations from the ideal state which may occur before the opposing forces concerned have had time to cause a change.

Self-regulation by negative feedback is, as mentioned, of central importance both in modern automation technique and in nature. All living organisms have a tendency to keep certain internal states constant. These states, often called "homeostasis" are maintained through different forms of negative feedback: that which is regulated is not kept absolutely constant, but variations are kept within certain limits by the fact that opposing forces are released when the state approaches one of the limits. We can take as an example the body temperature of warm-blooded animals and human beings. The factors regulating it work in the same way as a thermostat. The regulation takes place partly automatically, among other things, by our starting to sweat if it becomes too hot, thus losing heat by evaporation, and by shivering if we feel cold, thereby producing heat through movements of the muscles. But conscious behaviour is also part of the picture. We can take as an example behaviour with regard to dress and the regulating of room temperature. This behaviour is governed by the discomfort we feel when we are too hot or too cold. We put on more clothes, or add more fuel to the fire, when we are cold. And we take off jackets, or open windows, when we feel too hot.

The aim here is to discuss certain special forms of feedback which occur in legal reasoning (II) and in the development of legal-rule systems (III). Here, as elsewhere, feedback processes have their basis in the causal connections between the links in a chain of events. We shall, however, also look at some of the types of reasoning to which the feedback processes give rise, and discuss whether the conclusions are circular (IV). Finally, it will be pointed out that the presence of the types of reasoning mentioned can make conceptions of a "basic norm" superfluous (V).

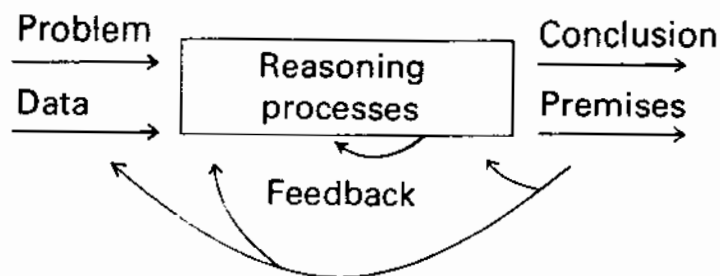


Figure 2

## II. FEEDBACK IN REASONING PROCESSES

A judicial reasoning process may be seen as a system of mental activity. The inputs are a *problem* (a general or individual question of law) and a set of *data* (legislative enactments, court decisions, information concerning the facts of the case, etc.) which are used to solve the problem. And what comes out of the system (the output) is a *conclusion* and usually also a set of *premises* for this conclusion (see Fig. 2 above).

The process is goal-directed—not only in the sense that one wishes to solve the problem—but also in the sense that one usually makes certain demands on the quality both of the conclusion and of the reasons to be offered in support of it and of the links between reasons and conclusion. If, for example, an individual legal question is to be answered, one wishes perhaps to arrive at a just arrangement of the relationship between the parties. In addition, one has certain demands on the different links in the reasoning, e.g. that the presentation of the facts of the case shall be in accordance with the evidence shown, and that the legal rules which are applied shall be interpreted in such a way that they appear reasonable in content, and that the interpretation can be supported by plausible legal arguments, etc. And finally, one wishes for a satisfactory logical relationship between the individual parts of the reasoning and between the latter and the conclusion.

All these aims are not always attained at the first attempt. For example, the conceptions of law and facts which you first find most natural may not lead to an adequate solution of the conflict in question. In such cases it seems reasonable to look through the material once more in order to consider whether any of the preliminary opinions can be revised. In this case a kind of *negative* (regulating) feedback takes place. The fact that the temporary conclusion arrived at deviates from that desired forms a piece of “information” which sets off new evaluations of the individual links in the chain of reasoning with the intention of coming closer to the goal. *Positive* feedback may also occur. Suppose, e.g., that you are pleased with

your preliminary conclusion, but, to make sure, you go through the material once more. And it is probable that your satisfaction with the final result will contribute to strengthening the belief that the points of view taken in the individual parts of the reasoning are adequate, and that this in turn will reinforce confidence in the adequacy of the final result.

Feedback may be either more or less extensive, as is shown in Fig. 2. It may lead from a temporary “output” to a completely new consideration of all data. Maybe new data will be introduced or the formulation of the problem changed. However, it sometimes happens, too, that you content yourself with reconsidering part of the material. And feedback may occur which only concerns one individual link in the chain. You read, e.g., a statute and find no reasonable meaning in it, and so you re-read it—more carefully and critically—to examine whether it can be understood in another way than was done at first. The feedback processes are in any case directed by evaluations of the conclusion as well as of the individual premises. A map of the way one’s thoughts have wandered in working on a legal problem would often show a complicated pattern of small and large feedback loops, twining in and around each other.

However, you do not always manage in this way to arrive at a set of premises and a conclusion which both are satisfactory on their own and go well together. It may happen, for example, that you hesitate to adopt an interpretation of the law which you feel may be too bold, or you push aside certain doubts as regards the facts of the case, in order to reach an adequate conclusion. And it may also happen that you have to give up trying to reach the result you would prefer because the premises are mutually irreconcilable. However, in all cases where a problem has been properly considered, the conclusion you finally reach, and the grounds given for it, are products of a process where the individual elements and the relationships between them have been evaluated and often reconsidered several times.

In the mental processes dealt with above, the connection between the different elements are of a *causal* kind. There are series of perceptions, evaluations and opinions which in their turn give rise to other perceptions, evaluations and opinions. The relationship you wish to attain between the conclusion at which you arrive and the reasons given for it is, however, a *logical* one. The word “logical” is here used in its widest sense. It does not refer only to deductive inferences, but also to the situation where a conclusion is to some extent supported by an argument—for instance an argument that must be weighed against other arguments before a conclusion can be reached.

The efforts towards harmonization of conclusion and premises which

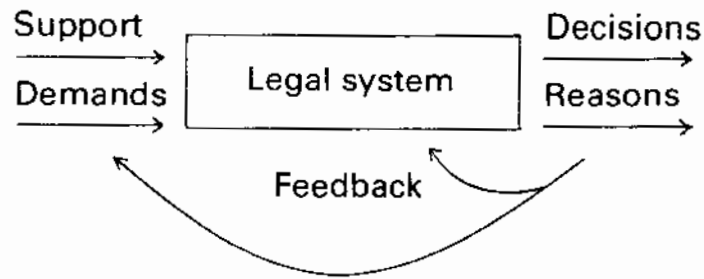


Figure 3

I have presented are sometimes reflected in the reasoning. It may happen, for example, that an argument *A* serves as a premise for the conclusion *B*, as well as *B*'s being offered as an argument for *A*. For example, a statutory provision is cited as a reason for solving an individual legal question in a certain way. And the fact that this gives an adequate solution of the case in question is presented as an argument for the chosen interpretation of the statute. The Danish author *Hyllested* considered this to be a general characteristic of legal thinking. A general rule of law, he said, can—except in certain clear cases—serve as reason for an individual decision only when this decision to some extent gives support to the rule.<sup>2</sup>

### III. FEEDBACK IN RULE SYSTEMS

The legal system of a country, or a limited part of it, may also be regarded as a dynamic system. Through legislation and court decisions new rules are continually being produced, and old ones are removed, changed or reinterpreted. The system receives different kinds of input from the environment. It receives *support* in the form of ideological backing from the population and of economic resources and powers of enforcement which the state places at its disposal. And in addition *demands* are placed on the system—both concerning the maintenance of individual rights and the solving of conflicts and as to the kind of interests and values which are to be protected, e.g. by new legislation. What the system produces is first of all *decisions* (legislative enactments, judgments, administrative decisions, etc.) which are often supplied with *reasons*. And the products may have feedback effects, as is illustrated in Fig. 3.

First, decisions and the grounds for them may influence the support for and the demands directed to the system. Laws passed and judgments delivered may, for example, be generally accepted and in this way contrib-

<sup>2</sup> *T.f.R.* 1910, p. 246.

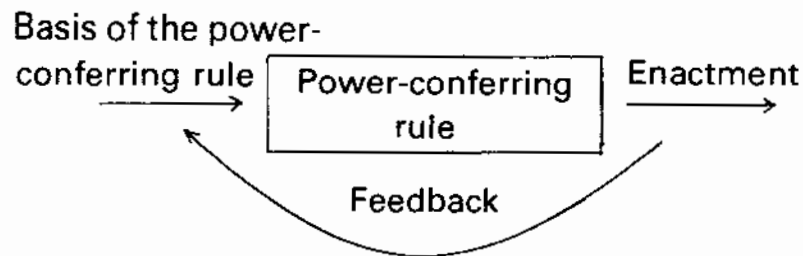


Figure 4

ute to conserve or strengthen the ideological support for the system. Conversely, the decisions may reveal weaknesses in the system and lead to a demand for reform.

Secondly, there is the more direct form for feedback (illustrated by the inner feedback loop in Fig. 3) where rules which are made (or modified) through the decisions are incorporated into the system.

Usually the *making* of a rule will presuppose the *actual use* of other rules. When, for example, a statute or regulation is passed, the legislators make use among other things of a rule which confers power to legislate or to issue regulations. This rule may be found in the country's constitution or in a statute conferring legislative powers on a subordinate legislative authority. And the fact that the power-conferring rule is used may have importance both for its validity and for its content. Take, e.g., a situation where originally the validity of the power-conferring rule was open to doubt. If such a rule is used as a basis for the enactment of new rules, and if these are recognized as valid law, the doubt will gradually disappear. If, on the other hand, the authorities hesitate to make use of the doubtful power-conferring rule, its position will be weakened, and it may gradually lose such validity as it may have had. Or we can take a case where the scope of a power-conferring rule is a matter of dispute. The ways in which the rule is practised can here determine whether in the long run it will be given a wide or a narrow interpretation. If we concentrate our attention on the limited part of the legal system which consists of a power-conferring rule and the rules enacted in accordance with it, we shall, in other words, find the kind of feedback loops illustrated in Fig. 4. In what follows we shall look rather more closely at these processes.

What in fact works back and for example contributes to confirming or weakening the foundation for the power-conferring rule is partly the *actual event* that an authority has interpreted and used (or abstained from using) the rule as a basis for its legislative activities. But it is not only the occurrence of these events which is important, but also the fate the *products* of this use have undergone. If, for example, the regulations which until now have been adopted in accordance with the power-conferring rule are



recognized by the courts as valid rules of law, this may be enough to remove possible doubts as to the validity of the power-conferring rule and to confirm the opinion that it holds good and gives sufficient basis for the type of regulation in question. On the other hand, if any previously issued regulations have, e.g., been declared *ultra vires* by the courts, this factor would pull in the opposite direction. The feedback here consists of the impact which attitudes and activities connected with the products of the power-conferring rule have on this rule itself, and thereby again on its future products.

The power-conferring rules found in the constitution of a country are often developed or reinforced through the kind of processes mentioned. This may be the case with written as well as with unwritten constitutional rules. The Norwegian Constitution may serve as an example. Until 1814 the country was united with Denmark in an autocratic monarchy. But as a result of the Napoleonic wars the Danish king was forced to surrender Norway to Sweden. A group of prominent Norwegians refused, however, to recognize this peace treaty. They took advantage of the Swedish army's involvement in warfare on the Continent to declare the country independent. A constituent assembly was convoked and it drafted and adopted the Constitution still in force. The assembly could not base its authority on any preexisting rule of law, but sought legitimacy from certain ideas developed within political philosophy, especially the idea that the people is the supreme authority, from which all institutions spring. In spite of its dubious foundation there is no doubt that the Constitution adopted in 1814—together with amendments made in accordance with that Constitution—has status as the supreme Norwegian law today. And the most convincing reason for this is that both the authorities and others have at all times proceeded on the assumption that what was passed in 1814 had constitutional status, and that all enactments made in accordance with the Constitution have been recognized as legal norms.

Until now we have considered the development of the legal system as a process where there exist causal relationships between decisions, opinions and various attitudes. But here, in the same way as in the questions we discussed in section II, the causal feedback processes are reflected in legal reasoning. The validity of enacted rules is argued by pointing to the fact that they were adopted in accordance with a power-conferring rule. And the validity of the power-conferring rule may be supported by showing that it is accepted in practice, since rules enacted in accordance with it are recognized as valid law. The Norwegian Constitution of 1814 has, for example, served as the ground for the validity of all enactments since passed. And at the same time the very fact that these laws are considered

valid provides the weightiest argument that can be given for the contention that the document which was produced in 1814 is today the Norwegian Constitution.

Lawyers are in no doubt that reference to practice such as I have mentioned can give adequate reasons for the validity and scope of legal rules. It may be asked, however, whether this reasoning is circular and therefore open to logical objections.

#### IV. CIRCULAR CONCLUSIONS?

At first sight the types of mutual grounds which I have exemplified (in sections II and III) appear suspect. It seems like sneaking into the premises the very thing that is to be proved, when one proves rule (or point of view) *A* by *B* after having already proved *B* by *A*. A closer analysis shows, however, that the *A* to be proved is not always identical with the *A* which has served as a ground for proof (and the same applies to *B*). Even if it is a question of the “same rule”, it may be that different aspects or different points of time in the history of its development are referred to in the two cases. Or it is possible that what is referred to is, in the one case, the rule and, in the other, its enactment. It is also of importance that I use the word “ground” (“reasons”) in so wide a sense as to include in its meaning “a certain support for”. For these reasons there is not necessarily a vicious circle in any of the patterns of argumentation mentioned.

Least problematic is the case where an enactment which has been adopted in accordance with a power-conferring rule (and is justified by that rule) is later presented as a ground for the validity or scope of the power-conferring rule. Here it is not the enacted rule, but the fact that the authorities have found sufficient basis for the enactment, which serves as support for the power-conferring rule. In other words, an authoritative decision is pleaded as a precedent.

As mentioned above, it also happens that the fate of an enacted rule—e.g. its acceptance by the courts—is presented as a ground for the validity of the power-conferring rule. Here the time factor comes in. What happens to the enacted rule *after its enactment* is what serves as an argument in support of the power-conferring rule. The fact that this rule *previously* served as a reason for the enactment does not make the argument circular. Both the scope of a rule and the conditions for its validity may change in time by being interpreted and used. One may well, therefore, prove norm *B* at the point of time  $t_1$  by *A*, and *A* at the point of time  $t_2$  by *B*.

However, even if both arguments refer to the same point of time, for example to the situation after the norm concerned has been accepted in practice, there need not be a vicious circle—so long as it is a question of *partial* grounds. The validity of the power-conferring rule may partly be defended by pointing to certain reasons for its acceptance which existed already when the enactment in question was passed, and partly by pointing to the fact that the stipulated rule is recognized. The first-mentioned argument may also serve as support for the stipulated rule, and the fact that this rule has been accepted in practice forms a weighty additional argument for now accepting its validity.

Let us finally look at the cases mentioned in section II, where a decision-maker justifies his solution of an individual legal question by referring to a rule of law, and justifies his interpretation of the rule by pointing to the solution. Here too, in many cases, the circularity will disappear upon a closer analysis of what is argued and how it is done. The situation may, for example, be that the alleged fairness of the result forms one argument (among several) in favour of regarding the rule as having sufficient scope to allow for the result. And the fact that the rule is given this construction serves as grounds for regarding the solution as legally correct. What one attains in this case (that the result is legally correct) is thus something other than that with which one started (the fairness of the result).

## V. A FEW WORDS ON THE IDEA OF BASIC NORMS

Many scholars have seen the legal system as a pyramid at the top of which there is a supreme authority from which all the subordinate levels of rules derive their validity. At different times in history this supreme authority has been God or Reason or the Sovereign. But as a result of secularization and democratization these personalized authorities have to a large extent had to give way to an impersonal apex such as Kelsen's "Basic Norm" and Hart's "Rule of Recognition".

It is psychologically understandable that many have looked for a common anchorage for all rules belonging to the same legal system. It seems to explain in a simple way the unity of law. And it provides an easy method for proving the validity of legal norms.

However, the grounds given for postulating a common highest norm for the legal system are more facile than convincing. This is particularly true of Kelsen's theory. His basic norm runs, in a shortened form, "the Constitution ought to be obeyed". If one uses this as an argument for the

validity of the Constitution, as Kelsen does, one will reach the conclusion that “the Constitution is valid because it ought to be obeyed”. And this does not say much more than that “the Constitution is valid because it is valid”.<sup>3</sup>

A basic weakness in Kelsen’s theory is that he concentrates all attention on the kind of reasoning which consists of deriving the validity of a norm from a higher norm: the validity of a regulation is derived from the statute which authorized its adoption, the validity of the statute from the constitutional provision granting legislative power, and the validity of the constitution from the basic norm. But this gives us an oversimplified model of legal reasoning. The normative arguments are not only linked together in chains of derivation. Sometimes reasons are like the legs of a chair, not the links of a chain, as John Wisdom has remarked.<sup>4</sup> And very often arguments must be weighed against each other. Value judgments and other preferences play an important part in these weighing processes. And there is a strong tendency for a question to be judged in the way it has previously been judged—if no special reasons indicate otherwise. To rely on precedents has therefore a central position in legal thinking. And, as I have illustrated above, these types of reasoning often lead to higher norms being sufficiently supported by norms of a lower order—so that the need to search for a basic norm ceases to exist.

All chains of reasoning usually end by sooner or later coming to premises which one cannot, or will not, prove. In law, however, the chains of reasoning may swing both upwards and downwards in the hierarchy of norms—and in and out of it. It is not, as Kelsen believes, the case that the highest norm is always the last premise.

The patterns of reasoning now described may, as mentioned above, be looked upon as reflections of the fact that the law forms a dynamic and open system with various forms of feedback. This picture of the law is more complicated and maybe less satisfying from an aesthetic point of view than is Kelsen’s simple pyramid. However, I regard it as more realistic.

<sup>3</sup> Cf., for a more detailed criticism of the idea of basic norms, Eckhoff and Sundby, “The notion of basic norm(s) in jurisprudence”, 19 *Sc. St. L.*, pp. 121–51 (1975).

<sup>4</sup> J. Wisdom, *Philosophy and Psycho-Analysis*, 1953, p. 157.