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# On Law and Reason

*Preface by Jaap C. Hage*



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One may thus conclude, what follows. (1) Each premise alone weakly supports the conclusion. (2) The step from any particular premise to the conclusion is a jump. In particular, the step from the legal norm to the conclusion is a jump. (3) The jump is reasonable if all the premises, including the added moral norms and value statements, are reasonable. (4) The step from the whole set of premises to the conclusion is no jump.

### 3.2.4 Strong Support

Let me now add the following:

5) The set of premises includes a legal norm which *strongly* supports the conclusion. One can thus express the legally important thesis that the conclusion has a strong *legal*, often statutory support.

The point of the concept “strong support” is this. In legal reasoning, statutory provisions and other established norms have a *privileged position*. Within this form of reasoning, one cannot replace them with premises of another type, and yet obtain the same conclusion.

As regards a general and informal account of the idea of propositions with privileged status within a theory cf. Quine 1961, xii ff.; cf. Lakatos 1970, 132 ff.

One may now conceive a set of statements, S, containing all premises belonging to a certain form of reasoning, such as the legal reasoning. Such a set is extremely extensive. One may argue that it is infinite. Keeping this in mind, one may propose the following definition.

The statement p *strongly supports* the statement q if, and only if, p belongs to a set of premises, S, having the following properties:

- 1) all these premises are reasonable; and
- 2) at least one subset of S is such that
  - a) q logically follows from it, and
  - b) all members of the subset are necessary to infer q from this subset (that is, q does not follow, if any premise belonging to the subset is removed from it); and
- 3) each member of S belongs to at least one such subset; and
- 4) p is necessary in the following stronger sense: q does not follow from any subset of S at all to which p does not belong.

Each subset mentioned in the condition 2) consists of premises of a thinkable correct inference within S, e.g., within the legal reasoning.

The condition 4) implies that q does not follow if p is removed from S. Thus, p’s membership in the set of premises S is a necessary condition for the fact that the conclusion follows from *this* set, e.g., the total set of premises reasonable within the *legal* reasoning. But obviously, the conclusion may also independently follow from *another* set of premises, e.g., reasonable within *moral* reasoning, albeit this set does not include p.

The concept of *strong support* is especially important in legal reasoning. Lawyers often argue that a decision should be supported by an established legal norm, explicitly included in or at least derivable from a statute. The same statute may support many decisions. To be sure, many other premises are also included in the supportive structure. Assume, e.g., that the conclusion follows from a set of premises containing an established norm derivable from some statutes concerning torts (see premise 1 of our example), a description of the case and some *precedents* (see premises 7 and 10). Any particular statement, belonging to this set, supports the conclusion in the discussed manner. Within the legal reasoning, however, such sources of the law as a statute often have a special position. The same decision may follow from another set of premises containing the same established norm, supported by the statute, the same description of the case and some quotations from *travaux préparatoires*. In this sense, neither the precedents nor the *travaux préparatoires* are necessary for the derivation.

One may also imagine a situation when the same conclusion follows from two independent inferences, the first containing the established norm together with a certain conceptual assumption, the second containing the same norm together with another such assumption. One can thus imagine the following two inferences.

I

An assumption p, belonging to the set S	The causal connection between an action and a damage is adequate, if the action makes the damage of the actual kind foreseeable for a very cautious and well informed person.
Other premises belonging to the set S	A caused negligently a traffic accident in which B's car was damaged. During the time the car underwent repairs, B could not provide work for some employees. Yet, he paid them full salaries, fearing that they would not return when needed again.  The action in question made a damage of the type described above (that is, a loss in consequence of paying salaries to not working employees) foreseeable for a very cautious and well informed person.
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Conclusion	The causal connection between A's action and B's damage was adequate.

The conclusion does not follow from set S, if one removes premise p.

II

An assumption p1, belonging to the set S1	The causal connection between an action and a damage is adequate, if precedents supporting the adequacy weigh more than those which support the conclusion that the causal connection is not adequate.
Other premises belonging to the set S1	A caused negligently a traffic accident in which B's car was damaged. During the time the car underwent repairs, B could not provide work for some employees. Yet, he paid them full salaries, fearing that they would not return when needed again.

Precedents supporting the adequacy of causation in such cases as described above weigh more than those which support the conclusion that the causal connection is not adequate.

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Conclusion	The causal connection between A's action and B's damage was adequate.
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The conclusion does not follow from set S1, if one removes premise p1.

In some cases, no *single* established legal norm has such a special position. Yet, one can say that, within legal reasoning, the conclusion does not follow from any subset of S at all to which no established legal norm of some kind belongs. The same conclusion may thus follow from a set of premises containing either a provision of the Tortious Liability Act, or a provision of the Traffic Liability Act; but the conclusion does not follow from any set of legally acceptable premises which does not contain either of these provisions.

The concept "strong support" may play a role not only within legal reasoning but also in other causal and normative contexts which include the question "why?". Natural science, e.g., often states that x occurs *because* of y. The words "why?" and "because" may indicate a *causal* relation. The logic of conditions has no means to define causal necessity which seems to have an *a-priori* quality (Cf. Kant 1983, B 233–235; Burks 1977, 619). Yet, laws of nature might serve as criteria of causation (cf. Peczenik 1979, 333 ff.). One might perhaps construct a reasonable interpretation of at least some laws of nature as expressing a relation of strong support between a statement of cause and an statement of effect. The concept of "strong support" might also be useful to explain the notoriously obscure distinction between *conditio sine qua non* and *conditio per quam*, made by Kelsen (e.g. 1960, 197). One might perhaps construct a reasonable interpretation, according to which only the latter, not the former, gives the conclusion strong support.

The following example elucidates the role of strong support in moral theory. Even if some moral systems require that one helps one's enemies, it is strange to say "A ought to help B *because* B is A's enemy". One may only plausibly say "A ought to help B *in spite* of the fact that B is A's enemy". To state this distinction precisely, one needs the concept of "strong support". To obtain a useful idea of when p strongly supports q, it is not enough to require that p belongs to a set of reasonable premises from which q logically follows. Indeed, even the premise "B is A's enemy" together with the Christian principle "one ought to help one's enemies" entails the conclusion "A ought to help B". On the other hand, one may say the following. The statement "B is A's friend" *strongly supports* the statement "A ought to help B" *relatively to the set of premises characterising an ethical system based on loyalty to one's friends*, in brief - the Friend Ethics, since (1) the statement "B is A's friend" belongs to the Friendship Ethic; and all the premises belonging to the Friendship Ethic are reasonable; and (2) at least one subset of the Friendship Ethic is such that (a) the conclusion "A ought to help B" logically follows from it, and (b) all members of the subset are necessary to infer the conclusion "A ought to help B" from this subset (that is, this conclusion does not follow, if any premise belonging to the subset is removed from it); and (3) each statement

of the Friendship Ethic belongs to at least one such subset; and (4) the statement “B is A’s friend” is necessary in the following stronger sense: the conclusion “A ought to help B” does not follow from any subset of the Friendship Ethic at all to which p1 does not belong.

Within the Friendship Ethic, there can exist many different sets of additional premises, each warranting the derivation. The only thing they must have in common is the statement “B is A’s friend”. I have thus assigned a special role to this statement. This is the only premise which one cannot replace by any other, belonging to the Friendship Ethic, and yet obtain the conclusion.

But cannot one in the same manner construct a Hostility Ethic, giving a similar privileged position to the statement “B is A’s enemy”? I assume here the hypothesis that such an Hostility Ethic could not consist solely of reasonable premises: No set of such premises implies the conclusion “A ought to help B” *only* together with the statement “B is A’s enemy”. Testing of this hypothesis constitutes an important challenge for future research.

### 3.2.5 *Depth of Reasoning*

To convert a jump into a deductive inference, one may add a different number premises, depending on how profound the reasoning is. One can, for example, think that the following inference is satisfactory:

Premise 1, see above	A person who caused damage in consequence of traffic with an engine-driven vehicle should compensate the damage if, and only if, there exists a legal ground therefor.
Premise 2, see above	A legal ground for the conclusion that the tortfeasor should compensate the damage exists, if the causal connection between his action and the damage was adequate.
Premise 3, see above	A caused negligently a traffic accident in which B’s car was damaged. During the time the car underwent repairs, B could not provide work for some employees. Yet, he paid them full salaries, fearing that they would not come back when needed again.
Premise 4*	The causal connection between the traffic accident and B’s loss in consequence of paying salaries to not working employees was adequate.
Premise 6 see above	The tortfeasor shall not compensate the damage, not even the adequately caused one, if the law of torts is not intended to give protection against it.
Premise 9*	The law of torts is not intended to give protection against damage of the actual kind.
Premise 11, see above	No other legal ground exists for the conclusion that A should compensate B’s loss in consequence of paying salaries to not working employees.

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Conclusion	A should not compensate B's loss resulting from paying salaries to \not working employees.
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If one doubts premise 4\*, one may argue in a more profound way and thus replace it with the premises (4, 5 and 8) from which it follows. In the same manner, if one doubts premise 9\*, one may replace it with premises 6, 7, 9 and 10. In the latter case, the more profound reasoning leads to a change of an originally assumed premise 9\*. One is no longer sure whether the law of torts is not intended to give protection against damage of the actual kind.

One may also expand in this manner the complex inference, proffered above. One may, e.g., replace premise 10 with a set of premises, justifying the outcome of weighing and balancing of various precedents.

*One may thus reason more and more profoundly, completing the actual set of premises with an increasing number of statements which provide support, often a strong support, for those already belonging to it.*

The idea of such a chain of support allows to answer an important question. Let us assume that a chain of reasons exists, that is, that p1 supports p2, p2 supports p3, etc. To put it more precisely, this would imply that p1 together with some other premises, say r1 and s1, logically entails p2; p2 together with another set of premises, say, r2 and s2, logically entails p3 etc. But what if we omitted the intermediate step, p2, and simply stated that p3 follows from p1 together with r1, s1, r2 and s2? This would effectively dissolve the chain of support. What remained would be a conclusion and a set of premises, without intermediate links.

This would have the effect of invalidating a central point of the theory defended in the present work. In order to defend the idea of chains of support, one may refer to the progress of thinking, in history of science as well as in the mind of an individual (cf. Alexy and Peczenik 1989). Knowledge evolves step by step. Longer and longer chains of support are developed. However, historical and psychological insights are not sufficient to justify a logical reconstruction of knowledge. Only logical or, at least, epistemological reasons serve this purpose. The concept of strong support makes it possible to develop such reasons. The concept of strong support thus matches the fact that there are statements, as for instance norm-statements in legal reasoning, which play a special role in justification in a given context. If there is such a statement, it can be used to establish a certain step of reasoning, which can be distinguished from other steps. First, one indicates that p2 strongly supports p3 and then, perhaps within another theory, one states that a deeper premise, p1, strongly supports p2. In this way, one organises the totality of knowledge into different levels, such as, e.g., biology and physics, each characterised by its own core of premises which strongly support conclusions. Were the levels eliminated, one would lose important insights in the structure of our knowledge. A supportive structure which expresses such a knowledge is better than one which does not. This is the reason for introducing the concept of supportive chains instead of simply talking about classes of premises.

### 3.3 Legal Rationality and Legal Paradigm

#### 3.3.1 *Introductory Remarks on Legal Paradigm*

The observation that knowledge evolves step by step has far reaching consequences. As stated above, there are statements, as for instance norm-statements in legal reasoning, which play a special role in justification in a given context. In this way, one organises the totality of knowledge into different levels, such as, e.g., biology and physics, or, let me add now, legal reasoning and legal philosophy. For example, when sentencing Charlie for a petty larceny, the judge may safely rely on the Penal Code and the established tradition of its interpretation. It would be absurd for him to embark on a philosophical discussion of the validity of the penal provision applied, the problem of validity in general, the demands of rationality which restrict arbitrariness of practical reasoning etc. Such questions are, however, of a vital importance for philosophy of law.

In Chapter 2 *supra*, I have thus discussed various demands of rationality, restricting arbitrariness in moral reasoning. A moral statement can thus be presented as a logically correct conclusion from logically consistent, linguistically correct and reasonable premises, weighing more than some counter-arguments. One can also discuss moral questions in an impartial and otherwise, rational way. Mutually incompatible moral statements can, however, simultaneously fulfil the demands of rationality. Legal reasoning, on the other hand, is more predictable and thus, *ceteris paribus*, less arbitrary than the moral one. In legal reasoning, one thus has access to a more extensive set of premises, such as statutes, other sources of the law and reasoning norms. The sources of the law are relatively fixed; cf. section 3.1.1 and 3.1.5 *supra*. These premises have been characterised as certain, presupposed, proved or otherwise reasonable; cf. Section 3.2.3 *supra*. I must now explain what these expressions mean. This task requires some remarks concerning philosophy of science.

#### 3.3.2 *Some Theories of Science*

The older theory of science was dominated by the so-called *inductivism*. According to this view, a theory is probably true if it constitutes an inductive generalisation of observational data. However, all philosophers know, at least since Hume, that justification of induction is difficult to provide, since it is not certain that the unknown objects resemble the known ones. “All food is milk”, said the baby. The more observation the baby gathered for support of this conclusion, the closer was the time approaching when the first cake would falsify the inductive generalisation.

No doubt, disciplines such as biology and sociology provide reasons for the correctness of induction. But if they are themselves inductive, they can only justify

induction in a circular way. To be sure, this does not make induction useless. Some philosophers of science have thus argued that if order rules the universe, induction is the only method of foreseeing the order (Reichenbach 1940, 97 ff.; Feigl 1962, 29 and 31); they also claimed that it is sufficient to reconstruct all scientific reasonings (Reichenbach 1949, 429 ff.) and involved in statistical reasoning (Hempel 1962, 133 ff.).

Other thinkers are highly sceptical as regards induction. One of them is *sir Karl Popper* (cf., e.g., 1959, 28 ff.). He claims that the proper method of scientific research consists of creating bold hypotheses. One should try to falsify the hypotheses. One accepts them conditionally, as long as they are not falsified (Popper 1959, 40 ff.). The growth of knowledge is the result of a process closely resembling what Darwin called natural selection, that is, the natural selection of hypotheses (Popper 1959, 108 and 1972, 261).

But not even Popper's falsificationism is free of difficulties. *Pierre Duhem* noticed already before Popper's time that one may criticise and eliminate the observations, apparently falsifying a hypothesis. Suppose the theory T combined with the auxiliary hypothesis A implies e but observation suggests non-e. For instance, physics (T) combined with the hypothesis of expanded universe (A) implies a given position of a star (e), but the star is not exactly where it should be (non-e). What should one do? (1) One may challenge the derivation by showing that e does not follow from T and A. (2) one may show that the observation which purports to show non-e is unreliable ("the telescope is wrong"). (3) One may reject the auxiliary hypothesis A. (4) One may reject the theory T. How should one choose? (cf. Koertge 1978, 255).

To solve this problem, Popper (1959, 83) has formulated some methodological rules. The most important is the rule that *ad hoc* auxiliary hypotheses, introduced in order to save the theory while not explaining anything else are forbidden. An *ad hoc* hypothesis thus does not increase the informational content of the theory, which Popper interprets as a degree of its falsifiability. Some science theorists give, nevertheless, examples of acceptable *ad hoc* hypotheses (cf. Nordin 1980, 113 ff. on Agassi).

Some philosophers of science try to enrich the list of methodological rules. *Knut Erik Tranöy* (1976, 131 ff. and 1980, 191 ff.) thus discussed "norms of inquiry" which have not only methodological character, but express distinct traditions, each concentrated around different value: self-realisation, public welfare, value-neutrality, testability, intersubjective controllability, honesty, sincerity, exactitude, completeness, simplicity, order, coherence, system and academic freedom.

According to *Thomas Kuhn* (1970, 23 ff.), one should judge scientific theories as parts of a broader totality called a *paradigm*. Each paradigm includes, *inter alia*, (1) some examples of concrete scientific achievements imitated by scientists in subsequent research, e.g. Einstein's research; (2) some value judgments, norms and basic beliefs shared by scientists, e.g. the criteria of correctness of physical experiments; and (3) the so-called symbolic generalisations, concerning the sense of scientific terms, such as "mass", "energy" etc. See also Popper 1959, 13: "a structure of scientific doctrines is already in existence;... This is why (a scientist) may leave



it to others to fit his contribution into the framework of scientific knowledge.” Cf. Popper 1970, 51 ff.

If a scientist cannot solve a problem within the paradigm, this does not falsify either the whole paradigm or theories essential to it but it “falsifies” his scientific skill.

Paradigms are incommensurable. In the transition from one paradigm to the next words change their meaning or conditions of application. Each paradigm then satisfies the criteria it dictates for itself and fall short of a few of those dictated by its opponent (Kuhn 1970, 109–110). The old paradigm gives way to the new one not *via* a rational debate but because the advocates of the old one die out. The choice of paradigms depends on weighing and balancing of values; “the relative weight placed on different values by different individuals can play a decisive role in individual choice” (Kuhn 1970, 262; cf. Sintonen 1986, 364 ff.).

In his later works, Kuhn introduced also the concept of “disciplinary matrix” (cf. Kuhn 1979, 293 ff.). Each matrix defines a scientific discipline. Within the same matrix, one paradigm can replace another. Normal science is bound to its paradigm. A paradigm shift happens only during a scientific revolution. But scientific revolution “need not be a large change”, and “occurs regularly on a smaller scale”, Kuhn 1970, 180–181.

According to *Imre Lakatos* (1970, 132 ff.), a given research program (a series of theories) contains a hard *core*, including some central propositions, e.g. the main points of the relativity theory. The core is protected by auxiliary hypotheses. One thus ought to direct counter-examples against the auxiliary hypotheses, never against the hard core. In Lakatos’s theory, the core thus plays a role similar to that paradigms have in Kuhn’s system.

The research program is fruitful (“progressive”), if it continually produces theories with greater and greater empirical content, explaining more and more observations. A degenerative research program is no longer able to do it. In such a case, the program often gives way to another one, with another hard core. Classical physics thus stagnated at the end of 19th century. All questions were apparently solved, no new theories appeared. Somewhat later, it gave way to the new physics, based on relativity.

In the present work, I have no chance and no reason to adopt any position in the controversies between different theories of science. Perhaps each one has a sound core. Let me thus inquire what each of them can teach a law theorist.

### 3.3.3 *Theory of Science and Legal Reasoning*

Theory of science helps one to understand and deeply justify legal reasoning, among other things to clarify the idea that legal premises can be characterised as certain, presupposed, proved or otherwise reasonable. However, to obtain these profits, one must perform some modification and generalisation of the applicable theses of theory of science. A *literal* application of theory of science to legal

reasoning is fruitless due to some peculiarities of the latter, *inter alia* because the goal of science consists in true description of facts, while the purpose of legal reasoning is more complex. Moreover, at least natural science is invariant in time and space, while the law is bound to a given society.

The modified theory of science is, first of all, fruitfully applicable to *legal dogmatics*. To a certain degree, it is also applicable to the legal practice, since its methods of reasoning are fairly similar to those of legal dogmatic; cf. section 1.1 *supra*.

All competing theories of science can to some extent help one to understand legal reasoning.

- I. Legal dogmatics is filled with examples of generalising the statutory provisions and other norms of established law *via* the so-called “legal induction”. One can express the “legal induction” in the following manner:

Premise	Cases $c_1-c_n$ which belong to the type C ought to be treated in the way P
Conclusion	All cases ( $c_{n+1}$ etc.) which belong to the type C ought to be treated in the way P

One can interpret both the premise and the conclusion either as norms or as theoretical propositions stating that an established norm exists, for instance that a certain source of law actually expresses not only the norm (1) but also the norm (2). The first interpretation is more correct, since a jurist can draw the conclusion (2) even if he does not believe that there is an already established norm (2), expressed in the sources of the law, in various practices, etc. In other words, whereas the “normal” induction leads to theories or hypotheses concerning preexistent facts, the legal induction, and the legal reasoning *ex analogia*, often leads from a norm to the creation of a new norm. The problem then occurs, how to justify this act of creation. The ordinary induction can be justified, if at all, by the metaphysical assumption that nature is uniform (cf., e.g., Braithwaite 1960, 259). One cannot justify the creation of a new norm in such a manner. Its justification is rather based on another norm, for example, on the principle of formal justice: the like should be treated alike (cf. Peczenik 1966, 50–72 and 1967, 135 ff.). In this way, a modified inductionist pattern of thinking leads a philosopher of law to a deeper understanding of the peculiarities of practical, *inter alia* legal justification.

- II. Falsificationism brings a law theorist to a similar conclusion. It is doubtful whether legal research consists of testing falsifiable hypotheses, since it is not clear what observational data these hypotheses would explain. This is especially doubtful when one considers the fact that legal research contains the discussed component of creating new norms. Neither is it clear what the term “to falsify” means in the present context. The goal of legal research is different, that is, to create as coherent systems of practical statements as possible, see below.
- III. The theory of norms of inquiry gives a law theorist more promise of success. The most important lesson a law theorist receives from this theory is the insight that normative and conventional components are by no means specific for legal research. This is important, because many critics of legal research claimed that

these components make it unscientific. One can also find analogies between norms of enquiry in natural science and legal research. Such values as self-realisation, public welfare, testability, intersubjective controllability, honesty, sincerity, exactitude, completeness, simplicity, order, coherence, system and academic freedom are certainly not alien to a legal researcher. On the other hand, value-neutrality rather is, for the reasons mentioned above. There are important analogies between natural science and legal research but it would be very strange to expect identity.

- IV. The paradigm theory leads to similar conclusions. One can thus find analogies between matrices (and paradigms) in natural science and legal research. According to *Aulis Aarnio* (e.g., 1984, 25 ff.), the *matrix* of legal dogmatics, in a modified Kuhnian sense, consists of the following four components.
1. A set of philosophical background presuppositions, *inter alia* the assumption that legal reasoning is based on valid law.
  2. Presuppositions concerning the sources of the law. One assumes that some of these are either binding or at least constituting authority reasons.
  3. Presuppositions concerning legal method. One thus assumes that legal reasoning is and should be governed by some methodological norms.

I will return to this problem in chapters 6 and 7 *infra* but let me give some examples. All courts and authorities must use statutes in the justification of their decisions, if any are applicable. They should use applicable precedents and legislative preparatory materials. One should not construe extensively provisions imposing penalties, taxes or other burdens on a person. When interpreting a statute, one must pay attention to its purpose.

4. A set of values, first of all concerning legal certainty (cf. section 1.4.1 *supra*) and justice.

Each legal *paradigm* contains a particular interpretation of the matrix. (*Re* description of various paradigms of legal research, cf. Dalberg-Larsen 1977, 513 ff.). Legal reasoning of different times and societies is underpinned by different sets of assumptions concerning valid law, legal sources, legal method, legal certainty etc. But all legal reasoning is based on *some* presuppositions of these kinds.

- V. One can also view legal reasoning in the light of a properly adapted theory of research programs. (I presented a different version of this view in Peczenik 1983, 126 ff. and 1985, 296 ff.). To achieve this adaptation, let me assume that the following kinds of entities, relevant for legal research, are analogous to the observational data:
- a. data concerning facts of the case, sociological and other data concerning the community etc.;
  - b. statutes and other sources of the law, authoritatively recognised in the legal system; and
  - c. *prima-facie* moral norms and value statements, commonly endorsed within the community.

Moreover, a fourth component is *to some extent* analogous to the data. This component comprises

- d. *prima-facie* moral norms and value statements, endorsed by the person performing the concrete act of legal reasoning.

This analogy is based, *inter alia*, on the fact that these norms and value statements are discussed by the lawyers and explained by theories they create. (One could regard these value statements and normative statements as data in the literal sense had one believed that people possess a “moral sense” enabling them to “see” values, cf. section 2.1 supra).

Let me also assume that two kinds of entities are analogous to theory cores in Lakatos’s sense:

- a. theory cores of auxiliary sciences employed in the law, such as economics, medicine etc.; and
- b. norms and other assumptions, concerning legal sources and methods, for example the assumption that legislative preparatory materials, (*travaux préparatoires*) should be treated as seriously in the process of statutory interpretation as judicial precedents.

A scientist tries to interpret observational data as mutually consistent and coherent with the “hard core” of the assumed theory. Analogously, a legal researcher tries to interpret the established legal norms and the *prima-facie* moral statement as mutually consistent and coherent with the core assumptions concerning legal sources and methods.

According to de Wild 1980, 55 ff., a series of juristic theories is progressive in Lakatos’s sense, if the next theory within the series explains and sets aside a greater number of deontic incompatibilities as its predecessor. This conception is compatible with the one presented above, provided that one extends de Wild’s list of legal data.

These core assumptions determine the employed research program. The research program is fruitful (“progressive”), if it continually produces coherent theories covering more and more established legal norms, more and more commonly endorsed moral statements, as well as more and more moral statements endorsed by the legal researcher in question. A degenerative legal research program is no longer able to do it.

The norms and other assumptions concerning legal sources and methods can thus be viewed both as components of a legal paradigm and as components of a theory core of legal research. *Some* of them are so well established that they constitute a component of the *matrix* of legal research. They must thus be included in theory cores of *all* legal research programs. To be sure, one may doubt each such assumption. But the total set of them is not only established in the legal practice and legal research but also related to the *concept* of legal reasoning. It would be strange to *simultaneously* refute a significant part of the set of such norms and assumptions, and still try to perform a *legal* reasoning.

To some extent, these assumptions are also similar to material inference rules in *Toulmin’s* sense (cf. 1964, 109.). Although not logically true, they are presupposed

in the everyday life. Some material inference rules are based on probability. Toulmin's example of such a rule is this: If someone is a Swede, one may assume that he is almost certainly not a Catholic. The reason for the norm is that less than 2% of Swedes are Catholics. The norm makes it possible to utilise the premise "Peterson is a Swede" as a support for the conclusion "Peterson is almost certainly no Catholic".

### 3.3.4 *Certain Premises*

The survey of analogies and differences between natural science and legal research draws our attention to the central role some assumptions play in both fields. Both fields thus include some statements, commonly regarded as certain, or at least taken for granted.

The idea of certain and assumed statements thus appears once again in our discussion. I have already claimed that premises supporting legal reasoning can be reasonable, that is, neither falsified nor arbitrary. There are many kinds of reasonable premises, characterised as certain, presupposed, proved or otherwise reasonable.

The problem of "certain" premises is recognised as very difficult. *Foundationalists* believe that an ultimate and certain ground for knowledge exists (cf., e.g., Chisholm 1957 and 1966). Some truths are evident, not merely reasonable. The key criticism of foundationalism is, however, "that the basic beliefs required by foundationalism turn out to be no more privileged and have no better justification than many other beliefs" (Kekes 1979, 407). *Coherentists* thus conclude that no beliefs are certain and that knowledge thus constitutes a totality whose fragments support each other.

Several versions of coherentism are defended among other by Quine 1953 and 1960, Sellars 1963, Lehrer 1974, Rescher 1973 and 1977 and Winch 1958. Between foundationalism and coherentism there are also intermediate positions. Cf. Kekes 1979, 405 ff.

But to that, one objects "that... false beliefs may also cohere. The coherentist has no rational way of choosing between equally coherent systems" (Kekes 1979, 406, reporting the foundationalists' views).

A synthesis of foundationalism and coherentism has been suggested by *Ludwig Wittgenstein*.

Firstly, his remarks concerning doubt and certainty reveal some foundationalist insights. One cannot doubt everything (cf. Wittgenstein 1979 No. 115 and 1 ff.), because doubt needs undoubted grounds (cf. Wittgenstein 1979 No. 122 and 217; Aarnio 1977, 100 ff.). "If you are not certain of any fact, you cannot be certain of the meaning of your words, either" (cf. Wittgenstein 1979 No. 114, cf. No. 231 and 1953 No. 481). Consequently: "The game of doubting itself presupposes certainty" (Wittgenstein 1979 No. 115. Cf. No. 124 and 253). In the system of our knowledge, "some things stand unshakeably fast and some are more or less liable to shift"

(Wittgenstein 1979 No. 144. Cf. No. 136). These “fast” things are more certain than any grounds which one can give in favour of them (Wittgenstein 1979 No. 307) and one can accept nothing as evidence against them. We can ask whether it can make sense to doubt them (Wittgenstein 1969 No. 2. Cf. No. 154).

Let me add the following. “Certain” statements are taken for granted by all normal people, perhaps under influence of innate mechanisms, or at least all normal people belonging to the culture under consideration. (If necessary, one may explicate the requirement of normality by recourse to psychiatry and medicine.) An innate mechanism seems to lie behind learning (Popper 1972, 71; Lorenz 1973 Ch. IV), abstract thinking, culture (cf. Lorenz 1973 Chs. V and VII) and language.

Cf. Chomsky 1970 and 1967, 87 ff. Not even Wittgenstein intended to rule out the possibility of innate knowledge, cf. Kenny 1975, 184. To be sure, such views are controversial. “What must be ‘innate’ are... learning strategies”, not grammar; Putnam 1967, 100. Cf. Goodman 1967, 107 and Katz 1966, 269.

In this context, one may also mention the Kantian tradition. According to Kant, one cannot empirically demonstrate that space and time exist, because such an empirical demonstration already presupposes space and time (Kant 1983, A 22 ff., B 37 ff., A 30 ff., B 46 ff.; cf. Kemp 1968, 16 ff.). Although mathematical theories change (cf., e.g., Popper 1972, 135), all of them must assume that objects of experience are located in *some* kind of space and time (cf. Patzig 1976, 32 ff. and Trigg 1973, 164–165). Our intellect, then, uses “categories” to actively organise spatially and temporally ordered sensations and enables us to experience objects. “We are indeed given certain things in sensation, but it is not *given* that this object before us is a table, and that a dog; before we can know this our understanding must have formed the concept of table and dog” (Kemp 1968, 24). Kant has formulated a list of categories, that is, logical forms and types of judgment (1983, A 80, B 106) including, *inter alia*, unity, substance and causality.

According to Kant’s principle of causality, all alterations thus take place in accordance with the law of cause and effect (A 189, B 232; cf. Burks 1967, 608 ff.). To be sure, the list of categories is controversial (cf., e.g. Strawson 1966, 79 and 266 ff.). Advanced physics, philosophy etc., may modify the category of causality, but the resultant concept must be useful for making distinctions similar to those made by the concept of causality in the ordinary sense.

It is natural to assume that such categories are innate.

Certainty based on culture is even more complex. The cultural tradition includes intricate relationships between beliefs, action and language. In this context, one may speak about the “form of life”. The concept, created by *Wittgenstein*, has been introduced to theory of law by *Aulis Aarnio*. To be sure, references to the form of life do not fulfil standards of clarity, usual in analytical philosophy. They suggest something important but unclear, “the presence of things partly hidden and not yet fully disclosed” (Black 1978, 330; cf. Black 1980 *passim*). Yet, one may state that our picture of the world - the *Weltanschauung* - including our most certain and

most central views - continually manifests itself in everyday action (cf. Aarnio 1979b, 34). This action is then the same thing as the form of life. The form of life is thus our picture of the world expressed in our everyday actions and in our everyday concepts. In this way, "certain" statements are linked with the form of life. Cognition is related to action.

At the same time, cognition is related to language. In other words, "experience cannot escape its being moulded by language" (Castaneda 1980, 36).

Yet, language "cannot be the limit of one's experience"; id. We must admit that human beings have far more concepts (distinctive cognitive capacities) than words for expressing them - as the example of colors amply shows", black 1962, 249. Finally, infant and animals have cognition but no language, cf. Churchland 1979, 137.

Finally, language is also related to action. "The speaking of language is a part of an activity, or of a form of life" (Wittgenstein 1953 No. 23. The term "form of life" has been used also by Spranger 1950). "Giving grounds... comes to an end; but the end is not certain propositions striking us immediately as true...; it is our *acting*, which lies at the bottom of the language-game" (Wittgenstein 1979 No. 204. Cf. No. 344). The language-game is "the whole, consisting of language and the actions into which it is woven".

Wittgenstein 1953 No. 7 in fine. Cf. No. 23: "multiplicity of language-games..., giving order..., describing..., reporting..., speculating about an event, forming and testing a hypothesis..., play-acting, singing catches,... making a joke" etc. Cf. Wittgenstein 1953 No. 19, 23 and 241, and pp. 174 and 226; Wittgenstein 1979 No. 204.

Language-games are related to one another (Wittgenstein 1953 No. 65), "form a family" (id. No. 67), and show "a complicated network of similarities" (id. No. 66).

Cf. Aarnio 1979b, 34: "(T)he world picture, or more correctly speaking, the fragment of a world-picture forms the foundation for a (certain) language-game. It forms the pre-knowledge upon which we rest ourselves when playing our language-game. Cf. Aarnio 1977, 126ff.; von Wright 1972 sections 4-6 *re* "pre-propositional stage".

Many concepts would therefore be impossible to understand without some knowledge of action to which they are related. "Our talk gets its meaning from the rest of our proceedings" (Wittgenstein 1979 No. 229. Cf. No. 476). Knowing nothing about the practice of legislation and adjudication, one would have difficulties to understand, e.g., the concept of law. In fact, action is at the bottom of *all* cognition. "At the beginning was the deed" (Wittgenstein 1979 No. 402, quoting Goethe, Faust I).

Conversely, many actions would be incomprehensible had one not at least a vague idea of some concepts. In this context one may repeat a more or less Kantian list of concepts such as "time", "space", "truth", "cause", "reason", "number", "substance" etc. No person belonging to our culture (and perhaps no human being at all, see above) can dismiss such concepts without replacement by counterparts having partly the same meaning.

Some certain statements are single axioms, each certain in isolation from other information. No normal person, e.g., doubts such propositions as "here is one hand and here is another". One takes for granted that one's hand is a hand, not an illusion,

since one uses one's hand to eat and work. One takes also for granted that other people partly resemble oneself, since otherwise one could not talk with them. Neither does a normal person doubt that the earth existed a hundred years ago.

However, Wittgenstein also made some coherentist remarks. Most statements, taken for granted as certain, are certain as members of a system. One may doubt each one of them but no normal person at the same time puts in question an extensive part of the system. Wittgenstein has thus pointed out that our "knowledge forms an enormous system. And only within this system has a particular bit the value we give it" (Wittgenstein 1979 No. 410. Cf. No. 144, 152 and 225). No single axioms are as certain as a system in which consequences and premises give each other mutual support (Wittgenstein 1979 No. 142). One cannot simultaneously doubt all the "fast" things, but one could every single separately (Wittgenstein 1979 No. 232. Cf. Aarnio 1979b, 29 ff.). One could thus doubt  $p_1$  when assuming  $p_2$  and  $p_3$ , and doubt  $p_3$  when assuming  $p_1$  and  $p_2$ . The *Weltanschauung* is like the bank of the river of our fluid and changing experiences. "And the bank of that river consists partly of hard rock, subject to no alteration or only to imperceptible one, partly of sand, which now in one place now in another gets washed away, or deposited" (Wittgenstein 1979 No. 99. Cf. No. 256). Some concepts are thus such that if one changed a great number of them at the same time, one also had to change our life in a radical, unacceptable and perhaps incomprehensible manner. And some beliefs are such that their negation would commit us to actions we are not prepared to perform and perhaps to silence and passivity.

Such obvious insights, intertwined with everyday action, are the "end station" of all reasoning. The term "form of life" thus refers to the end-points of justification, often unknown and perhaps even impossible to state precisely.

In other words, the form of life is a reification of the end-points of justification. To understand this idea, a jurist may consider that analogously, the state in Kelsen's sense is a personification of the legal order, Kelsen 1960, 294 ff.

As regards such "certain" knowledge of *nature*, the form of life is the same for all, at least for all educated people belonging to the Western culture. No sane person doubts that one can travel to America, that the fastest way to do it is to take a plane, and that the plane can fly. Such common insights, shared by all, are perhaps less frequent as regards *society* but they exist. Some of them concern *values*, e.g., no sane person thinks that it is a good thing to burn babies alive. Moreover, many actions would be incomprehensible had one not at least a vague idea of some social, economic and legal concepts. One, e.g., "buys" food in a shop "owned" by a "company" and "pays" with "money". Indeed, one can hardly conceive a world in which nobody "owned" anything nor could "buy" anything. (For that reason, Pol Pot had no chance in Cambodia.)

### 3.3.5 *Presupposed Premises*

"Presupposed" premises are taken for granted within a particular practice belonging to the culture under consideration, e.g. within the legal paradigm; see the preceding



section. The concept of “practice”, here used to define presupposed premises, differs from the concept of “culture”, implemented above to define the certain ones. A culture thus covers many areas of life while a practice covers a single one, such as chemical research, legal dogmatics etc.

More precisely, presupposed premises are taken for granted within, so to say, a *necessary* practice, that is a practice in which one must participate if one wishes to well perform certain kind of action. For example, a member of our society who wishes to discover an unknown star must participate in the kind of astronomical research our universities teach. He has no choice, e.g. he cannot involve himself in astrology, instead of astronomy.

When defining presupposed premises, I thus disregard such practices as a definite religion. Who wishes to participate in religious activity *has* a choice; he can, e.g., convert from the Swedish Lutheran Church to Islam.

One can repeat here the discussed distinction between single axioms and systems. Very few presupposed premises are taken for granted as single axioms, in isolation from other information. One may thus doubt almost any presupposed premise but one cannot simultaneously put in question an extensive part of the system.

Certain and presupposed premises are of two kinds, substantive and procedural. The former describe intuitions, observations, intentions, evaluations, interests, interpretations etc. The latter describe procedures of rational reworking of the former, through weighing and balancing of various criteria of *coherence*, perhaps together with other considerations concerning rational *discourse* (cf. section 4.3 infra) or *scientific* method, such as Popper’s method conjectures and refutations (cf. section 3.3.2 supra). Such procedures possess a content-generating capacity. Their existence make our knowledge to change and grow.

As stated before, premises presupposed by lawyers belong to the legal paradigm. Let me add that *certain* premises, too, belong to this paradigm, not in the sense of having a peculiar legal character but because of not being contradicted by any normal jurist. Moreover, certain and presupposed premises jointly constitute the juristic *theory core*, to some extent resembling theory cores in Lakatos’s sense. This core thus includes some fundamental moral views, commonly accepted by both lawyers and people who make moral judgments. Furthermore, it includes the assumption that legal reasoning is supported by valid law. It also contains fundamental juristic views on the authority of the sources of the law and legal norms of reasoning. Finally, it includes some fundamental evaluative views, first of all concerning legal certainty and justice. If one wishes to perform a *legal* reasoning, one cannot at the same time put in question an extensive part of this theory core.

Neither can one simultaneously doubt an extensive part of valid statutes, precedents and other important sources of the law. The sources of the law can thus be regarded as another part of the juristic theory core, if one does not wish to regard them, instead, as observational data of the lawyers.

The great role of presupposed premises in legal reasoning makes the law more fixed than the purely moral reasoning. The latter is more fluid, it does not rest on any established paradigm.

### 3.3.6 *Proved Premises of Legal Reasoning*

“Proved” premises follow from a consistent set of certain premises and/or premises taken for granted within the particular practice, such as the legal paradigm. The word “proved” means here “proved within the paradigm”, *not* “proved in an absolute, philosophically unquestionable way”. Not even theories of natural science are proved in the latter sense.

In the discussed example of legal reasoning concerning the question of remoteness of damage, the following premise, e.g., is proved:

- |   |  |
|---|--|
| (1) A non-controversial legal norm, cf. now Ch. 2 Sec. 1 of the Tortious Liability Act, Sec. 18 of the Car Traffic Liability Act etc. | A person who caused damage in consequence of traffic with an engine-driven vehicle should compensate the damage if, and only if, there exists a legal ground therefore |
|---|--|

This premise follows from the statutes and established interpretation norms, and one can prove that the statutes under consideration have been enacted according to the constitution; in the legal paradigm, one takes for granted the established interpretation norms and assumes that the constitution should be obeyed.

A lawyer thus hopes that faithfulness to juristic assumptions may help him to escape the need to pay attention to vague moral values. And he hopes this is a way to create legal certainty.

But not all interpretation norms and presuppositions, constituting the legal paradigm, are explicitly formulated in commonly accepted texts. Many are implicit, assumed in a tacit way. Nobody spells them out, but if they had been formulated, no jurist would refute them.

The list of statements, thus proved in the legal paradigm, is not fixed. One must argue for them, sometimes in general terms, sometimes in concrete cases. They thus reveal themselves step by step in the legal discourse. An attempt to completely describe them resembles the work of Sisyphus. As soon as one problem is solved another occurs. One hopes to be able to definitively solve all the problems, but no one has done it so far.

### 3.3.7 *Other Reasonable Premises of Legal Reasoning*

In hard cases, however, presuppositions commonly accepted within the legal paradigm do not liberate the lawyer from the necessity to make a moral choice. This is the lawyer’s dilemma. Most premises, added in order to make the reasoning in the discussed example of legal reasoning logically correct, must be called “reasonable, although neither certain, presupposed, nor proved”.

As stated above, a premise is reasonable if, and only if, the following conditions are fulfilled:

1. The premise is not falsified.
2. The hypothesis is not to a sufficiently high degree corroborated that this premise does not logically follow from a highly coherent set of premises. In other words,

the hypothesis is not sufficiently corroborated that the premise is not perfectly S-rational.

Such a highly coherent set need not solely consist of certain premises, premises presupposed within the legal paradigm and proved premises. To be sure, a lawyer who regards a premise or a conclusion as reasonable has often a disposition to assume that if he had more information then he would be able to show that it logically follows from a set of such premises. For instance, he may assume in some cases that the juristic choice between criteria of adequacy follows from such a set. Yet one cannot prove the additional premises, consisting of *norm-expressive statements or value statements*.

Certainly, one can show that the norm-expressive statement or the value statement in question constitutes a meaningful *prima-facie* moral reason, cf. sections 2.3.1–2.3.3 supra. One can also show that the norm-expressive statement or the value statement in question is logically related to some theoretical propositions; cf. sections 2.3.4 and 2.4.6–2.4.8 supra.

But such logical relations are too weak to constitute the proof. In a hard case, one must also argue that no thinkable counter-arguments weigh more than the norm-expressive statement or the value statement in question. Such an argument requires a definitive act of weighing and balancing of reasons and counter-arguments; cf. section 2.4.5 supra. In other words, it is based on an unargued assumption. To be sure, one must be able to incorporate such assumptions into a highly *coherent* value system; cf. section 4.1 infra. But more than one system can fulfil this condition. Such systems may be incompatible; and it may be impossible to show which one of them is the most coherent one; cf. section 5.9.4 infra. The assumptions which underly a juristic act of weighing are thus reasonable, but neither certain, nor presupposed, nor proved.

The set of reasonable, although neither certain, presupposed, nor proved premises contains also some analytic, empirical and practical statements. As an example, one can proffer the additional premise 5, see the discussed example of a case concerning adequate causation.

(5) An added and reasonable premise:  
the chosen criterion of adequacy

The following criterion of adequacy should be  
used in the case under consideration:

(2) the causal connection between an action and  
a damage is adequate, if the action makes the  
damage of the type T foreseeable for a very  
cautious and well informed person.

The hypothesis is not to a sufficiently high degree corroborated that this premise does not logically follow from a consistent set containing:

1. an analytic proposition which says that this criterium of adequacy can meaningfully be proffered as a *prima-facie* reason for the conclusion that the connection is adequate;
2. an empirical proposition which describes the choice of criteria of adequacy, often made in the legal practice; and
3. a moral value statement concerning the appropriateness of the choice of this criterion, endorsed by the person who performs the legal reasoning in question.

### 3.3.8 Reasonableness and Falsification

At this moment, a supporter of *Popper's* philosophy (see section 3.3.2. *supra*) may retort: Facing these difficulties, is it not better to abandon the theory of reasonable support in the legal paradigm? Is it not better to assume, that a legal view is to be accepted as a hypothesis, until it is falsified?

Let me answer this objection in the following way: One must make a choice between two philosophical theories, both contestable, Popper's falsificationism and, on the other hand, the theory of reasonable support in the legal paradigm. One may prefer the former but only within a limit: it is an excellent theory of *science* but neither a theory of ultimate basis of all knowledge nor a plausible theory of moral and legal justification. Outside of the proper limit of Popper's falsificationism, it is better to choose the theory of reasonable support.

Although Popper's theory is plausible as regards *scientific* theories, it fails to answer the question of its own foundation. How to justify Popper's philosophical views, including his methodological rules? One cannot interpret these as another hypothesis, falsifiable but not verifiable. What would be regarded as a falsification of this philosophical hypothesis? Any answer to this question is controversial. One must perhaps regard Popper's theory, which connects science with possibility of falsification, as itself unfalsifiable. *Ultimate* philosophical statements, such as Popper's methodological rules, have a special character. They are not hypotheses but assumptions, taken for granted, with no intention to test them. One may also hope to present them as plausible interpretations of analytical theses, whose refutation would create logical contradictions. As regards ultimate justification, cf. Apel 1976b; Kuhlmann 1985, 60 ff.; Apel 1986.

The theory of reasonable support is to be preferred as regards practical, *inter alia* moral and legal, views because the idea of falsification of practical statements faces the following problems.

1. It is not clear whether one may speak about *truth* and *falsehood* of practical statements. How can one then falsify them, that is, prove that they are *false*? Cf. sections 3.3.3 *supra* and 4.2.6 *infra*.
2. The role of weighing in practical reasoning is incompatible with falsificationism. Each act of weighing ultimately rests on an unfalsifiable assumption one chooses in a particular case; cf. section 2.4.5 *supra*.
3. It is not clear what component of the practice of legal reasoning is analogous to proffering observational data as a proof that a theory is false. To be sure, *some* borderline between legal observations and legal theories may be determined, but it is by no means so sharp and clear as within the natural science. This fact makes an application of Popper's theory to the law difficult.

Cf. section 3.3.3 *supra*. From a certain point of view, the sources of the law seem to be analogous to observational data. But legal data include also information about various facts, e.g. the facts disputed in the legal case under consideration, the fact that the legislator and some other persons expressed some value statements etc.

The value statements and normative statements uttered by the lawyer who performs the legal reasoning in question show, too, a vague resemblance to propositions reporting observational data.

4. On the other hand, the practice of moral and legal reasoning provides many examples of giving reasons, reasons for reasons, etc. It thus fits well the model of reasonable support.

### 3.3.9 *The Problem of Fundamental Justification of Legal Reasoning*

The theory of reasonable support and legal paradigm, outlined above, makes it possible to better understand the problem of deep *justification* of legal reasoning. “Justification” is defined as giving sufficient reasons for a conclusion. But what reasons should one regard as sufficient? Reasons sufficient for a lawyer may be insufficient for a moralist, a political opponent, a philosopher, etc. The latter three might demand a justification of premises that the lawyer takes for granted. Juristic conclusions, judicial decisions and the like can thus be either justified

- a) within the framework of legal reasoning, in other words, within the established legal tradition, or paradigm; or
- b) outside it.

The former is *contextually sufficient legal justification*. It has a support of such premises as

- statutes, precedents and other sources of the law;
- traditional legal reasons, such as statutory analogy;
- various legal methods, such as teleological interpretation of statutes;
- traditional reasoning norms, e.g., if an earlier statute is incompatible with the later, one shall apply the latter; and
- legal value judgments, concerning, e.g., legal certainty, justice, reasonableness etc.

The latter can be a *deep (fundamental) justification* which provides support or criticism to the premises that the lawyer takes for granted (cf. Peczenik 1983, 1).

I disregard here a possibility of justification of another type, e.g., historical.

Various parts of the legal tradition or paradigm may thus - for various purposes and in various contexts - require the deep justification. For example, the question, Why shall we follow the Swedish Constitution?, makes no sense if asked during a legal trial. The court simply takes for granted that one should do it. On the other hand, the question may be pertinent at a political meeting where one answers an objection posed by an Anarchist.

As regards deep (fundamental) justification of legal reasoning, I have already stated the following. Various demands of rationality restrict arbitrariness of moral and legal reasoning. A moral or a legal statement thus can be presented as a

logically correct conclusion from logically consistent, linguistically correct and reasonable premises. Moreover, in the law, one has access to an extensive set of reasonable premises, both moral and specifically legal. In the next chapter, I will pass to a still deeper problem one must face when analysing the idea of a reasonable premise.

# Chapter 4

## The Ultimate Justification of Moral and Legal Reasoning

### 4.1 Coherence

#### 4.1.1 Introductory Remarks

As stated before, legal reasoning is supported by reasonable premises. A reasonable premise is not falsified and not arbitrary. A premise is thus reasonable if, and only if, the following conditions are fulfilled:

1. The premise is not falsified.
2. The hypothesis is not to a sufficiently high degree corroborated that this premise does not logically follow from a highly coherent set of premises.

In consequence of this definition of reasonableness, the theory of rationality, presented above, is logically dependent upon a theory of coherence. One must thus make the justification even deeper and discuss the concept of coherence. The discussion of this concept, presented in this section (4.1), follows closely a paper on the subject, jointly prepared by *Robert Alexy* and myself (Alexy and Peczenik 1989).

Since a long time, the idea of coherence has been regarded as an attractive tool for solving epistemological problems (cf., e.g., Hegel 1970, 24). The idea is applicable in many different contexts. A theory can thus be coherent with data. One theory can be coherent with another. Legal rules can be coherent with moral principles. Interpretation of a statute can be coherent with moral principles and such sources of the law as precedents; and so on.

Many thinkers also agree that coherence is more than logical consistency. They are right. To be more precise, consistency is a necessary but not sufficient condition of coherence. Physics and chemistry, e.g., are highly coherent with each other, whereas there is a lesser degree of mutual coherence between physics and religion though it cannot be said that they contradict each other.

Philosophers face great difficulties when attempting to formulate the precise concept and criteria of coherence. There is a tendency to avoid the term altogether, or to characterise a coherent set of statements metaphorically as a “tightly knit unit” etc.

Some influential theories of coherence assume that more general statements create coherence in the less general ones they support. According to Neil MacCormick's conception of normative coherence in the law (1984, 235 ff.), some principles support a number of legal rules, and thus make them coherent.

Already Savigny (1814, 22) has pointed out that "von ihnen (the leading principles) ausgehend den inneren Zusammenhang und die Art der Verwandtschaft aller juristischen Begriffe und Sätze zu erkennen, gehört eben zu den schwersten Aufgaben unsrer Wissenschaft, ja es ist eigentlich dasjenige, was unsrer Arbeit den wissenschaftlichen Charakter giebt".

On the other hand, some other theories assume that particular data-statements make general theories coherent. According to Nicholas Rescher, a proposition is thus true if and only if it follows from consistent data. However, the total set of accessible data-statements will be inconsistent, for at least two reasons. Firstly, there is always the possibility of a mistake. Secondly, one may obtain inconsistent data, depending on which of the competing theories of scientific method one applies. Rescher thus determines various maximal consistent subsets inherent in the (inconsistent) set of data. Some of those are to be preferred. A proposition, *p*, maximally coheres with data, if it invariably follows from all preferred maximal consistent subsets of data (Rescher 1973, 169 ff.). One can thus say that the preferred subsets of data support this proposition.

Ronald Dworkin's theory of "integrity" (that is, coherence) of law includes MacCormick's idea that principles make rules coherent. But Dworkin's theory seems to be more general. He compares a lawyer with a novelist, participating in writing a "chain novel" *seriatim*. Each novelist, and each lawyer, aims to make his additions fit not only general principles but all the material he has been given, the predictions of what his successors will want or be able to add to it, and his substantive value judgments (cf. Dworkin 1986, 225 ff.).

### 4.1.2 *The Concept and Criteria of Coherence*

I will now analyse the concept and criteria of coherence. The order of presentation is the following. Firstly, I will state the main idea of coherence, though the concept remains a vague one. Secondly, I will present some criteria and principles which need to be weighed and balanced against each other to determine coherence of a theory.

The main idea or the *concept* of coherence can be expressed in the following way.

The more the statements belonging to a given theory approximate a perfect supportive structure, the more coherent the theory.

As regards the connection between coherence and support cf. Peczenik 1983, 88 ff.; Aarnio 1987, 198 ff.

One must explain the meaning of the terms "theory", "support", "supportive structure" and "better support".



1. The word “*theory*” is used here in a broad sense, covering both descriptive, for example empirical theories, and normative or evaluative theories (norm systems or value systems).
2. The concept of support used here is a weak one. It has already been characterised (cf. section 2.7.4 *supra*) in the following manner: The statement *p* supports the statement *q* if, and only if, *p* belongs to a set of premises, *S*, from which *q* follows logically.

In an extreme case, *q* follows from *p* alone. A stronger concept of support will be introduced below.

Certainly, any *p* together with an arbitrarily added premise supports any conclusion whatever. However, this weak concept of support may be used as a starting point of discussion. Inappropriate additional premises are to be eliminated by the criteria of coherence, discussed below, and perhaps by further means.

3. Supportive *structure* depends on supportive relations between statements belonging to the theory in question. That is to say that the supportive structure of a theory is the same as the class of formal properties of the supportive relations between statements belonging to it.
4. The degree of *perfection* of a supportive structure depends on the degree to which the criteria of coherence are fulfilled.

Criteria of coherence make the concept of coherence more precise. The criteria are related to each other. The degree of coherence depends on weighing them up and balancing them against each other. The following discussion of these criteria constitutes one *conception* of coherence. Since the concept of coherence is vague and contested, it is possible to conceive of coherence in different ways.

The criteria of coherence can be divided into three classes, i.e., the properties of the supportive structure constituted by the theory, the properties of concepts applied by it and the properties of the scope covered by it.

### 4.1.3 *Properties of the Supportive Structure*

#### (1) The Number of Supportive Relations

The minimum condition of coherence is that a coherent theory contains statements *supported by reasons*. The following criterion and principle of coherence clarify this. Although they may differ in form, the criterion and the principle are merely different expressions of the same requirement of coherence.

1. *Ceteris paribus* the more statements belonging to a theory are supported, the more coherent the theory.
- 1\*. One should justify as many statements as possible.

The clause “*ceteris paribus*” and the expression “as many... as possible” indicate here the same thing; no principle or criterion of coherence is independently

sufficient but must be weighed against others. For example, other principles of coherence may explain the fact that relatively many statements belonging to the theory are not justified but merely taken for granted. Moreover, the quality of coherence can be weighed and balanced against other values. For example, in a case of emergency, a fireman should obey orders rather than continually demand a time consuming explanation.

Speaking about numbers, two questions occur. Firstly, what is a single statement?, Secondly, how to treat numerous but trivial and perhaps redundant statements? The first question may be answered in many ways depending, among other things, on the subject of the theory. One possible answer is this: A single statement *sensu stricto* is the smallest unit of a theory which can be confronted with the question “why?”, and, therefore, is capable of being justified. As regards the second problem, the *ceteris-paribus* clause in criterion 1 implies that it can and must be solved by the other criteria of coherence, and perhaps by other means.

## (2) Length of the Supportive Chains

Coherence depends also upon the length of the supportive chains belonging to the supportive structure. A statement  $p_1$  thus supports  $p_2$ ,  $p_2$  supports  $p_3$ , etc.

Longer chains make the supportive structure more complex. In other words, they make the theory more structured. They can also make it more profound.

The following criterion and principle of coherence help to clarify this idea.

2. *Ceteris paribus*, the longer the chains of reasons belonging to a theory are, the more coherent the theory.
- 2\*. When justifying a statement, one should support it with as long a chain of reasons as possible.

The principle 2\* demands a long series of justifications. Together with the definition of support, it assumes deductive correctness and they jointly imply a complex criterion of coherence. This comprises completeness of deductive trees, obtained as a result of a logical reconstruction of the supportive chain.

## (3) Strong Support

A premise may occupy a peculiar position. To state this special position precisely, I have already defined the concept of strong support.

The statement  $p$  *strongly supports*  $q$  if, and only if,  $p$  belongs to a set of premises,  $S$ , having the following properties: (1) all these premises are reasonable; and (2) at least one subset of  $S$  is such that (a)  $q$  logically follows from it, and (b) all members of the subset are necessary to infer  $q$  from this subset (that is,  $q$  does not follow, if any premise belonging to the subset is removed from it); and (3) each member of  $S$  belongs to at least one such subset; and (4)  $p$  is necessary in the following stronger sense:  $q$  does not follow from any subset of  $S$  at all to which  $p$  does not belong.