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Logic and Law: The Precedence of Precedents

Roy L. Stone-de Montpensier*

"The common law is tolerant of much illogicality especially on the surface; but no system of law can be workable if it has not got logic at the root of it." Clearly, legal systems, whose arguments consist largely of "paraduction," manifest aspects of formal logic. This paper attempts to show how the binding force of precedents, i.e., "paraduction," rests upon some of those foundational matters which trouble the philosopher concerned with symbolic and mathematical logic.

It is not without interest that some writers on mathematics and logic have compared the plausibility of logic or mathematical reasoning to the deciding of legal questions and the methods of judging. Both those who argue the supremacy, superiority or ultimacy of deductive reasoning, and those who similarly argue for the inductive process, ultimately make reference to legal argument, to analogies and to cases.

Recently, Lord Gardiner, Lord Chancellor, sitting in the House of Lords made a "practice statement" which casts doubts upon the binding force of London Street Tramways Co. v. London County Council. That case held that decisions of the House of Lords are binding on the House itself. This has led to the view that House of Lords decisions regarding questions of law could not be overruled except by an Act of Parliament. In the

† The author wishes to acknowledge Stuart Linney, for his long discussions and many suggestions on the logical matters contained in this paper, and John Crook of St. John's College Cambridge, for reading and correcting the draft and for checking the quotations against the originals.


5. The new rule of precedent was a statement of court practice rather than a decision in a case upon appellate review.
7. The appellate committee of the House of Lords functions both as a parliamentary committee and as the highest court in England. Decisions of cases and statements of practice are tendered to the House of Lords as reports of the committee.
practice statement, Lord Gardiner concluded that:

Their Lordships regard the use of precedent as an indispensable foundation upon which to decide what is the law and its application to individual cases. It provides at least some degree of certainty upon which individuals can rely in the conduct of their affairs, as well as a basis for orderly development of legal rules.

Their Lordships nevertheless recognize that too rigid adherence to precedent may lead to injustice in a particular case and also unduly restrict the proper development of the law. They propose, therefore, to modify their present practice and, while treating fromer decisions of this House as normally binding, to depart from a previous decision when it appears right to do so.

In this connection they will bear in mind the danger of disturbing retrospectively the basis on which contracts, settlements of property and fiscal arrangements have been entered into and also the especial need for certainty as to the criminal law.

This announcement is not intended to affect the use of precedent elsewhere than in this House.11 Apart from difficult questions of interpretation, there are certain interesting and difficult questions concerning the logical status of the practice statement itself.

The first matter to notice is that the remarks were termed a "practice statement," which reminds one of practice directions, and practice notes. These directions and notes do not seem to have been discussed in the jurisprudence texts, although barristers must recognize their importance and follow their directions, orders and rules. In the present context, the question becomes whether practice notes or directions, and now practice statements, have the same logical status as judgments. Put in terms of a logical system, this question would raise the point whether such practice directions, notes or statements are metastatements concerning the logical system or whether they are rules, axioms or theorems within the logical system. While the matter has not been canvassed in these terms, it would appear that jurisprudence commentators can not agree as to the status of such matters. This is reflected in the two differing views over the logical status of the London Street Tramways case.

Dr. Glanville Williams considers that such statements are merely statements concerning the courts' practice and not part of the logical system of the law.10 It appears that the House of Lords in its recent practice statement tacitly supports this view for unless it treated the decision of the House of Lords in London

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Street Tramways as a statement of practice and not as a rule of law, it could not have amended or altered it in the manner it did—without an Act of Parliament.

The other view is taken by Rupert Cross, who contends that the decision of the House of Lords in London Street Tramways could only be amended by statute.\textsuperscript{11} This view implies at the least that the decision was a rule of law—a rule, theorem or axiom of the logical system of the law. This latter view is at least consonant with dicta of certain Lords of Appeal in Ordinary including Lord Reid who was present when the Lord Chancellor made his practice statement.\textsuperscript{12}

Let us now consider the logical status of the decision in the London Street Tramways case, not with a view to settle the question of how the decision could be overruled, repealed, amended, abrogated or abolished, but rather as an example of how logic, consistency, circularity, open-endedness and self-reference, must occur in any decision procedure, and particularly that of law. The recent practice statement, it is thought, does not affect the logical matters hereinafter argued, although it affords, rather unfortunately, an example of how the House of Lords has fallen into the paradox of the Cretan Liar.

It is said in the jurisprudence texts that the rule laid down in London Street Tramways, that the House of Lords' decisions are binding on itself, cannot logically support the doctrine that the House is bound by its own decisions. That decision being a decision of the House itself is only a decision of the House itself, and but for that decision, the House would not be bound, so that that decision is not binding. The argument that it is binding is said to be circular. A fallacy arises if it is used to support the rule it seeks to maintain. The House cannot "[heave] itself up by its own boot straps."\textsuperscript{13} Salmond asks what is the "logical status" of the decision, and he further uses the word "fallacy" which, in a narrow sense, means some mistake in logical argument, or in a deduction. The question is, however, whether there is any logical system which does not share the very features which Salmond finds objectionable in the argument that the decisions of the House are binding on itself because they are decisions of the House. One may argue that the decision in London Street Tramways derives its force from the logic of the law itself, that the logic of the law has no different

\textsuperscript{11} See Cross, op. cit. supra note 8.
\textsuperscript{12} See note 21 infra.
\textsuperscript{13} SALMOND, op. cit. supra note 10, at 187.
status from the status of logic or mathematics,\textsuperscript{14} and that the
decision supports the conclusion that the decisions of the House
of Lords are binding on itself.

"Mathematics issues in identities, logic issues in tautologies."	extsuperscript{15} Why should Ramsey say such a shocking thing? The
question could be put in this way: Does the law of the excluded
middle support the system of logic of which it is a part? Is it an
axiom of the system which cannot be proved inside the
system, or does it owe its authority or power to something out-
side the system? If the law of the excluded middle owes its
force to the rules of the system of logic, or if it is derived
only from an unproved and unprovable axiom, this would
equal the status of logic with that of the doctrine of precedents.
Here we are discussing a two-valued logic which has consistency
rules, not a many-valued logic. There are alternative logics
which do not use the law of the excluded middle. In math-
ematics there are alternative geometries which do not use the
primitive axioms of Euclid, but these alternative geometries can
be given a model in Euclidean geometry.\textsuperscript{16} Waismann suggests
that these alternative systems may compel us to doubt whether
two-valued logic is fundamental to our thinking;\textsuperscript{17} Kneale argues
that many-valued logics are \textit{au fond} reducible to the two-valued
logic.\textsuperscript{18} The arguments here, however, relate only to traditional
logic, and consist of attempts to show that questions about the
logical status of logic are philosophical questions, the same sort
of philosophical questions as are raised in discussing the status
of the binding force of precedents. They further demonstrate
that the same questions concerning 1) circularity,\textsuperscript{19} 2) paradox,

\begin{itemize}
\item \textsuperscript{14} There is a parallelism in Salmond's cry for the logical status
of the doctrine of precedents and that for the logical foundations
of mathematics. Wang criticizes the latter. The talk of logical foundations
is misleading at least on two accounts; it gives the impression that
number theory and set theory do not give their own foundations, but
we must look for foundations elsewhere, for example in logic; and it
implies that the grand structure of mathematics would collapse unless
we quickly replace the sand underneath with a solid foundation.
\item \textsuperscript{15} \textsc{Ramsey, Foundations of Mathematics} 264 (1931).
\item \textsuperscript{16} Waismann, \textit{Are There Alternative Logics?} 46 \textit{Proceedings of
Aristotelian Soc'Y} 77 (1945).
\item \textsuperscript{17} See Waismann, \textit{Analytic-Synthetic}, Analysis, Dec. 1949, March
1953.
\item \textsuperscript{18} Kneale, \textit{The Development of Logic} (1962). \textit{But see Lukasievicz, Philosophische Bemerkungen über mehrwertigen System der Aussagenkalkül, Comptes Rendus des séances de la Société des Sciences et des Lettres de Varsovie} (1930).
\item \textsuperscript{19} Neither thought corresponds to the actual situation. In-
deed, if we adopt the linear mode of thinking to proceed from
3) incompleteness, 4) consistency, and 5) interpretation arise in
the philosophies of logic, mathematics and law.

Salmond suggests that it is not possible to treat the decision
of the House of Lords in the London Street Tramways case as a
rule or, in a looser form, a part of the doctrine of precedents.
"It is merely a statement of the practice of the Courts." In so
far as it is only a statement about the doctrine of precedents
and not a part of it, the statement that the House of Lords is
bound by its own decisions, so it is alleged, is unobjectionable.
As a metastatement it is acceptable.

This thesis, however, will not do. The London Street Tram-
ways decision is a rule of law, and is a function of that calculus
which is the law. It is not a metastatement about the prac-

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Wang, *Eighty Years of Foundational Studies, A Survey of Mathematical
Logic* 34, 37 (1964).


21. Could a decision of the House of Lords now overrule a decision
of itself? The answer seems to be "no." Both Lord Radcliffe and Lord
Reid in *Nash v. Tamplin & Sons, Ltd.*, [1952] A.C. 231 (H.L. 1951), felt
constrained to follow the rule when they have criticized a decision of
the House of Lords in these words:

My Lords, the decision of this house in *Usher's Case*
has often
been alluded to and sometimes explained. More than once it has
been rather explained away than explained: for I think it has
come to be regarded as a special case, the principle of which it
is difficult to discover and almost impossible to extend.

Id. at 256 (opinion of Lord Radcliffe).

My Lords, it is very unsatisfactory to have to grope for a deci-
sion in this way, but the need to do so arises from the fact that
this House has debarred itself from ever reconsidering any of its
own decisions. It matters not how difficult it is to find the ratio
decidendi of a previous case, that ratio must be found. And it
matters not how difficult it is to reconcile that ratio when found
with statutory provisions or general principles: that ratio must
be applied to any later case which is not reasonably distinguish-
able.

Id. at 250 (opinion of Lord Reid). Compare, however, Lord Reid in the
Midland Silicones case, [1962] A.C. 446 (H.L. 1961), where he talks of
finding ratio decidendi. The question whether there is one ratio deci-
dendi in a case, or of a case—the ratio—or whether there are more than
one is much disputed and as yet not resolved. If we treat the ratio as
scientists treat models and analogies for the purpose of seeking out hy-
potheses it can be seen how we can have more than one picture or model.
Different pictures or models in physics may produce different "laws." Compare Einstein with Newton. Einstein showed that relativistic physics
could be put in terms of classical physics and of course the Riemannian
gometry he used could be put in terms of Euclidean geometry. In the
tice of the courts, that is to say it is not a statement for the laying and setting up of a legal system, but part of the system. Church shows how a metalanguage is necessary to set up a formalized language. In setting up the symbols of the formalized language, the metalanguage is discrete, as the former is English and the latter a symbolic language. In the case of law and legal systems, both metalanguage and legal language, except in cases of extreme technicality, are English. It is in the function being performed that the distinction is brought out. The external observer of the law examines statements in ordinary English; the internal analyst, the judge, examines statements in ordinary English. Though the language concerned is the same, their activities present this language with a difference.

Further, the rule of London Street Tramways has a status in the logical system of the law corresponding to the results achieved by Gödel's theorem, that the unprovability of a certain mathematical truth in a certain system of logic derives its force from arguments within the system itself. The arguments concerning isomorphism and Gödel Numbers can have a place in legal systems. Furthermore, paradoxes, which are a peculiar feature of logic, particularly modern logic, are present in the law. In some instances legal paradoxes are analogous to logical paradoxes such as the Cretan Liar; in other cases they are analogous to pragmatic paradoxes such as "there are no propositions."

The rule propounded in London Street Tramways has force not only because of its logical status, although this differs minimally from the logical status of the logic of mathematics, but also because it is established by paraduction in precisely the same way as logical systems are related one to another by paraduction. Paraduction is the ultimate argument in mathematical precedence of precedents it may be seen that Haseltine v. Daw & Sons, Ltd., [1941] 2 K.B. 343 (C.A.), may afford alternative pictures or rationes decidendi. The lift may be seen as giving rise to 1) an occupier's liability and 2) the carrier's liability. Jurists' discussions of ratio decidendi in terms of material facts and the reasons for their forming part of a decision reflect the idea that there is only one ratio. There are dicta of judges which suggest that there are more than one. "For the appellants to succeed it would be necessary to find from the speeches in this House a ratio decidendi which would cover this case and then to follow the ratio decidendi. [The decision of this House is authoritative in cases of which the circumstances are not reasonably distinguishable from those which gave rise to the decision]." Scruttons, Ltd. v. Midland Silicones, Ltd., [1962] A.C. 446, 475 (H.L. 1961).

22. CHURCH, INTRODUCTION TO MATHEMATICAL LOGIC 47 (1958).
23. See Stone, supra note 2.
systems, in logical systems and in physics.

Another question arises out of the logical status of the decision in the *London Street Tramways* case: Could the decision have been otherwise without being paradoxical? While it is true that the Supreme Court of the United States is not bound by its own decisions, this does not rest upon a decision of the Court itself. When the practice in England was that decisions of the House of Lords were not binding, this was not enunciated in any particular decision or in any rule. Suppose there had been a decision which stated the rule in this form: Decisions of the House of Lords are not binding on the House itself. Would this not be a paradox or contain a paradox, and the same sort of paradox as the Cretan Liar—"I always tell lies"?

Let us consider this hypothetical decision, that the decisions of this House are not binding on the House, without recourse to any argument or consideration or circumstance outside the statement itself. The paradox would be made stronger if we turned the statement into a form more nearly like that of the Liar. Suppose the statement ran, "This House is never bound by its own decisions," or "The decisions of this House are never binding on the House itself." One can see when we ask the question, "Is this hypothetical decision in itself never binding on the House?" that this entails that the decision is not binding.

To be parallel to the Cretan Liar situation we must test the paradox with reference to the truth or falsity of the assertion contained in the statement, "I always tell lies,"\(^\text{24}\) which if true,

\(^{24}\) It has been suggested that the analogy to the Liar paradox does not hold or holds only with the proviso that the decision in *London Street Tramways* was the only decision of the House of Lords. Russell, in 1 *WHITEHEAD & RUSSELL, PRINCIPIA MATHEMATICA* 60 (2d ed. 1925), gives an account of the Liar paradox:

The oldest contradiction of the kind in question is the *Epimenides*. Epimenides the Cretan said that all Cretans were liars, and all other statements made by Cretans were certainly lies. Was this a lie? The simplest form of this contradiction is afforded by the man who says "I am lying"; if he is lying, he is speaking the truth and vice versa.

To preserve the parallel, the hypothetical decision of the House of Lords may be put this way: the House of Lords says that all House of Lords decisions are not binding and all other decisions of the House of Lords in the past were not binding. Is the hypothetical decision not binding? Let us suppose that there is a decision of the House of Lords which, like *London Street Tramways* says that the decisions of the House of Lords are binding; such a decision, being a decision of the House of Lords, is not binding and therefore does not contradict the rule that the decisions of the House of Lords are not binding. Where the House of Lords says "We are bound by our own decisions," a decision to the effect that we are not bound by our own decisions would be binding, but where the House de-
entails that this statement itself is a lie. Hence, it follows that
the statement “I always tell lies,” is itself a lie, and so false.
As it is false, I do not always tell lies. This does not entail
that I always tell the truth.

The Gödel result shows that if a statement in a mathematical
system is provable it is refutable, and if it is not provable it is
irrefutable, and that in any consistent system the statement that
the system is consistent, is thus undecidable. Concerning Gödel’s
theorem, it is worth noticing that according to Wang “although
several alternative proofs for Gödel’s first theorem have been
offered, there exists, so far as we know, no alternative proof for
the second theorem.”25 The significance of this theorem may
best be seen if we recall first, “there had been some vain belief
or hope” that theorems in one system could be proved to be
consistent in some other system.

The whole program of searching for consistency proofs seems to
be based on a belief that we can justify our use of intuitively
less reliable arguments by more reliable ways of reasoning.
Gödel’s theorems show that either the belief is false so far as
the matter of proving consistency is concerned, or, what is more
likely, there are certain intuitive modes of reasoning about posi-
tive integers whose intuitive character we have in our formaliz-
ations not yet succeeded in revealing.

Gödel’s second theorem has also been applied to the study
of relative consistency and relative models. Thus $S_1$ is consist-
ent relative to $S_2$ if we can prove the consistency of $S_1$ by as-
suming the consistency of $S_2$; $S_1$ has a model relative to $S_2$ if
we can define a model for $S_1$ by using notions of $S_2$. In most
cases, $S_1$ is consistent relative to $S_2$ when and only when $S_1$
has a model relative to $S_2$.26

This account shows that mathematical systems may be mu-
tually consistent. Isomorphism or homomorphism which is
sought between one system and another said to be relatively
consistent is merely a precise argument from analogy. Som-
ewhere Wang describes the value of formalization as presenting
a precise concept out of a messier one. Such formalized con-
cepts when they have a one-to-one relation mirrored in their
models of them are said to be isomorphic. Legal cases where

25. Wang, supra note 19, at 28.
26. Ibid.
they present analogies, as Bacon calls them, cases which fit and square, may be relatively consistent not because they are isomorphic but because the messier concepts contained in the cases under discussion can still be compared and contrasted with other messier concepts. Formalization may be a useful tool—isomorphism is a formalized analogy.\textsuperscript{27}

When Salmond asks a lawyer why the decision of the House of Lords is binding on the House itself, the lawyer would reply that a decision of the House says so; there is a precedent for it. Salmond considers this would amount to begging the question. "Clearly, the doctrine of precedent cannot be authoritatively supported by reference to [a] precedent [itself]."\textsuperscript{28} Suppose however, the lawyer was more subtle than Salmond's naïve respondent. Suppose the lawyer said,

You know cases are like models of systems in logic and mathematics. It is true that they are messier, that the variables are more proliferated, but there are methods known in the law to formalize the system into a model. One method is that of finding a \textit{ratio decidendi} of a case.\textsuperscript{29} Sometimes it is done by fitting and squaring the features of a case and distinguishing those which clash and jar and by operating a system of paraductive reasoning, \textit{similia e similibus}.

The lawyer can derive by this informal logic the rule in a case

\textsuperscript{27} It is submitted that the mathematical account of isomorphism when contrasted with analogy gives the lawyer the means to distinguish between following a decision when it is on all fours with a case and the use of analogy where the features and facts of a case are not equivalent to ("the same as") but analogous with another case. In the second instance, reasoning must be used to show up the analogies; hence the lawyer's use of \textit{rationes decidendi} of a case, preferring, explaining, disapproving, etc. Consider his use of "the same case," "semble," "the same facts" and "the same set of facts."

Isn't it rather the general method of analogy that is applied here, consisting in the extension to inaccessible numbers of the relations which can be verified concretely for the accessible numbers? Indeed the reason for applying this analogy is all the more strong since there is no precise limit between the numbers which are accessible and the ones which are not.

Wang, \textit{supra} note 19, at 39. Two cases in which the judicial activities of explaining and distinguishing are made perspicuous are Blyth & Blyth, [1966] 1 All E.R. 524 (H.L.) and The Aello, [1960] 3 Weekly L.R. 145 (H.L.) (Lord Radcliffe). Preferring is related to explaining.

\textsuperscript{28} Quote from \textsc{Salmond, op. cit. supra} note 10, at 187.

\textsuperscript{29} Jurists, not judges, discuss whether there is one or more \textit{rationes decidendi} in a case. My view is that the search for a \textit{ratio decidendi} is like the use of models in hypothetico-deductive scientific theories, i.e., "hypothesis hunting": both are very complicated and ramified activities. Until there is a case in the House of Lords such that the \textit{ratio decidendi} of the case is such and such, all judicial observation on \textit{ratio decidendi} is obiter. There is no case on \textit{ratio} comparable to \textit{London Street Tramways}. 
such as Shelley's Case\textsuperscript{30} or Purefoy v. Rogers,\textsuperscript{31} or the resolutions in Spencer's Case.\textsuperscript{32} He can reconcile two authorities and two lines of cases by this method. He can criticize, doubt, comment on, not follow, distinguish or explain by this "artifical reason." All these activities are the applying of "the general method or activity of analogy." Because formalization is a powerful tool in mathematics, and because mathematics and logic have become rigorous in that their proofs are deductive, there is a tendency to ignore the incompleteness of mathematics and logic, and to believe that what is not deductive, what is messy and untidy, can have no part in either. As yet, legal analogies have not been treated to rigorous formalization though there has always been much talk of this program. The analogies between law and mathematics and logic are all at least intuitively powerful.

Why argue that the doctrine of precedents is not circular? Because the logical status of the doctrine of precedents is the same as that of logic and mathematics. Gödel has shown that there is an unprovability in logical systems which shows the incompleteness of logic and so makes us doubt Wittgenstein's and Ramsey's accounts of logic as issuing in tautologies. One may wish to have it both ways; if logic issues in tautologies and is circular, Salmond's account of the doctrine of precedents is circular, so that the logical status of the doctrine corresponds with that of logic itself; if the status of logic is incomplete as Gödel suggests, the logical status of the doctrine of precedents is unprovable in the same way.

Gödel's theorem shows that in any sufficiently rich formal system we can formulate some arithmetic problem within the system which can be decided by intuitive consideration but not by the proof procedure of the system; or we may also say that by constructing a system and then treating the system as the object of our study, we create some new problem which can be formulated but which cannot be answered in the given system.\textsuperscript{33}

Gödel's important second theorem states the impossibility of formalizing any consistency proof in the system itself.

What Gödel has shown is that although the problems can be asked in the same system, to answer the question in the positive or to prove the statement Con (S), we need a system which is in some sense stronger than S. If S is consistent then Con (S) as a statement of S is not provable in S.\textsuperscript{34}

At this point it is worth remarking that no account is given

\textsuperscript{33} Wang, supra note 19, at 28.
\textsuperscript{34} Id. at 39.
of "logical status." Ramsey and Wittgenstein thought that logic issues in tautologies, and Gödel has shown that it is undecidable. Thus logic itself has precisely the same logical status as that of the doctrine of the binding nature of the decisions of the House of Lords.

"At the moment the legal view is that the House of Lords is bound by its own decisions. Suppose that we challenge a lawyer who puts forward this proposition and ask him his authority for it."\textsuperscript{35} We notice here that the lawyer is asked his authority, not his argument for it. Authority and argument are by no means the same activity in law. "Following," which is an activity in the judicial process, where there is a case for authority, is no stronger an activity than "distinguishing," which is an activity where there is no authority, or "doubting" or "criticizing" when the authorities are two or more and are inconsistent, or "reconciling" where the authorities seem to be inconsistent but are not.\textsuperscript{36} Salmond argues that one can no more prove the doctrine of precedents by reference to precedents than one can prove the sovereignty of Parliament by reading out a statute which declares that it is. This suggestion by Salmond raises the curious feature which again the doctrine of precedents shares with mathematics and logic and with any self-referring statement in ordinary language, that there are analogies to the Liar paradox, which Gödel noticed. This is yet another argument in support of the analogy between logic, mathematics and law, in that the "logic" of them all is isomorphic. But what sort of paradox is it? Precedent-proved precedent seems to me to be a logical paradox, yet that the House of Commons declares itself to be sovereign by passing an act, has some features of pragmatic paradoxes. Bacon makes the point that Henry VIII passed an Act of Parliament declaring that any further act passed during the minority of a King or Queen affecting the religious settlement should be void.\textsuperscript{37} The first Act of Edward VI, who was a minor both when he succeeded and at the time the Act was passed, was to repeal the Act of Henry VIII. Bacon shrewdly observed that things "that do not bind, may yet serve for a time."\textsuperscript{38} This remark brings out the contingent features of the pragmatic paradox and

\textsuperscript{35} Salmon, op. cit. supra note 10, at 187.
\textsuperscript{36} In In re Rycroft's Settled Estate, [1961] 3 All E.R. 581 (Ch.), Wilberforce, J., remarked that he could decide the case both upon principle and authority.
\textsuperscript{37} 14 Bacon, Works of Francis Bacon, Maxims of the Law, 253 (Ellis & Spedding ed. 1881).
\textsuperscript{38} Ibid.
the pragmatic feature of the case of the Statute.

Salmond contrasts the logical status of the doctrine with its legal status. In this he comes very near the Swedish Realists' argument that law is fact and that legal norms are merely statements of a factual situation, descriptions of the practice of the courts, wigs, and gowns, judges, policemen, writ servers, Huissiers and Greffiers, gibbets and prison bars and stone walls.

This analysis does not mean that the decision in the London Street Tramways is devoid of legal status. It is an important statement of the practice of the House [of Lords] which [is being] followed, at least in words. This is what all decisions on precedents are: statements of judicial practice or tradition.

Why is this all that decisions on precedents are—merely the statement of judicial practice? On the view that law is fact, it may be possible to argue so. But on this view it is also arguable that the decision that the rule in Shelley's Case, which states that where in a limitation the words "and his heirs" follow either mediatel or immediately upon a prior limitation to an ancestor they shall be construed as words of limitation and not of purchase, is a statement of how officials will act and react.

To the theory that law is fact, alternatives are the command theory of Austin, the normative theory of Kelsen, the predictive theory of the American Realists, the Primary and Secondary Rule theory of Hart, and my own "calculus" view. Each of these interpretations of foundations of law will yield different interpretations of the role any rule plays in the legal game.

So, according to Austin, the decision of the House of Lords vis-à-vis precedent will be a command of a sovereign, addressed to an inferior, and enforced by a sanction, and as much a command as the rule in Shelley's Case or a section of an Act of Parliament.

According to the American Realists the decision will be a prediction of how the judges will decide as and when the case may be, and what relevant law they will take into account when they decide. This too, like Swedish Realism, is an empirical investigation, but limited to how "societal agents," that is, judges, act, and so will act.

According to Hart, the decision will be a secondary rule directing judges how to apply primary rules of which the rule in Shelley's Case is one. For Hart, the secondary rules are still rules, even if they owe their status to a non-legal quasi-grund-

39. SALMOND, op. cit. supra note 10, at 188.
norm; they are not statements of practice.

My own thesis is that the law is a calculus of rules, remedies or rights, which treats of all decisions of courts, all statutes, maxims and customs, all particulars of law, by which I mean such rules as the rule in Shelley's Case, or in Rylands v. Fletcher, or in Donoghue v. Stevenson, or Purefoy v. Rogers. To set up the calculus one uses a metalanguage, but we must not confuse or conflate the metalanguage with the law itself. The parallel between this and the difference between metamathematics referred to by Wang and that between metalanguages and mathematical logic as discussed by Church is close and crucial.

The calculus-like nature of law may be seen in another way. We can ask whether there are any distinctions of logical status between rules which are said to be merely statements of practice and those which are said to be legal rules. With this in mind consider the following statutes: first, the Judicature Act of 1873 setting up the Supreme Court and providing for the rules and orders thereof; and second, the Law of Property Act repealing the rule in Shelley's Case. The law seems like a calculus in that there are primitive axioms which are given, and cannot be derived from other axioms. There are, however, rules which are extensions from primitive axioms or functions in the system. There are also rules of interpretation. Such, in my submission, are London Street Tramways, Purefoy v. Rogers, or Shelley's Case. Examples of extensions from primitive axioms are decisions that a sandwich is a meal, when an Act of Parliament prescribes that certain provisions should apply to meals, or that such and such an act constitutes murder or negligence, or that such and such a limitation is a perpetuity.

Compare and contrast rules of interpretation in a legal system and in mathematics and logic. The law is a calculus which proceeds from primitive axioms. It proceeds in two ways: first the discovery of new theorems derived from the axioms that are original, primitive and perhaps given; second, the discovery of

43. See Wang, supra note 19, at 63-66.
44. See Church, op. cit. supra note 22, at 47. This matter is discussed by the author in An Analysis of Hohfeld, 48 Minn. L. Rev. 313 (1963).
45. Supreme Court of Judicature Act, 1873, 36 & 37 Vict., c. 66.
46. Law of Property Act, 1925, 15 Geo. 5, c. 20.
new axioms. An example of a new theorem would be the application of a rule to a new set of facts. *Donoghue's Case* may be a new axiom,47 and *Grant v. Australian Knitting Mills*48 would be a theorem derived from the axiom. A striking example of this is to be found in the judgment of Diplock, L.J., in *Wooldridge v. Sumner.*49 From Lord Atkin's primitive axiom, "You must take reasonable care to avoid acts or omissions which you can reasonably foresee would be likely to injure your neighbour,"50 Diplock derives this:

> A person attending a game or competition takes the risk of any damage caused to him by any act of a participant done in the course of and for the purposes of the game or competition notwithstanding that such act may involve an error of judgment or a lapse of skill, unless the participant's conduct is such as to evince a reckless disregard of the spectator's safety.51

The status of the *London Street Tramways* case may depend upon the sort of logic the legal calculus is based upon. The decision in that case is analogous to a rule of interpretation. Some logics contain rules of interpretation as part of the logic itself; others have rules of interpretation as metastatements. To which system is the *London Street Tramways* case analogous? If the axioms and theorems of the calculus are consistent, then it is redundant to add an axiom or a consistency rule in a meta-language to show that the matter of the calculus is consistent. If it is not consistent, then the decision has created a new calculus, and the calculus could be operated in accordance with a consistency rule without stating it. Without deciding the question, it seems that there are two ways of considering the logical status of the decision in *London Street Tramways.* One is that it is a rule of interpretation, which may be redundant but is not circular as Salmond suggests. The other is that it is an axiom of the system. As Diplock points out, one must not mistake aphorism for exegesis. One must distinguish the case in which it is a matter for the jury to decide on the facts of the case before them, e.g., whether such and such constitutes reasonable care, from the case in which it is a matter for the judge, in which the question concerns the nature of reasonable care. In the case where the jury decides that such and such is reasonable care, no

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47. *The Duke of Norfolk's Case,* Howard *v. Norfolk,* 3 Ch. Cas. 1, 22 Eng. Rep. 931 (1681), is a paradigm, where Lord Nottingham introduced into the notion of perpetuity the idea that it consisted in remoteness of vesting, whereas before it related only to inalienability.
50. Id. at 632.
51. Id. at 634.
theorem follows from the axiom. Where cases are cited to the judge in which questions of fact have been left to the jury, these decisions may be "authorities" where the instant case is on all fours with the cited case. The judges hear about such and such a case and follow the case, or if it is a rule in a case they say that such and such applied. Where the matter is for the judge, and he interprets or extends the concept of "reasonable care," a theorem is derived from the axiom.²⁵

So far, it has been argued that the logical status of a legal system is analogous to the logical status of logical and mathematical systems, and that the same cluster of foundational questions arises in all three systems. It has been argued also that the hypothetical case, which is the contradictory of the decision in *London Street Tramways*, resembles the Liar paradox and the Gödel result. To avoid the paradoxes presented by these three results it is suggested that the House of Lords decided *London Street Tramways* as it did to preserve consistency within the legal system. The question now arises, on the calculus view of the decision that it is a statement in the system itself and not a metastatement about the system, whether the Gödel result does not apply to the statement of the House of Lords itself. If the Gödel result applies to the statement itself, it being a statement within the legal system, then like a statement in a mathematical system, it is not provable in the system by the proof procedures of the system. If this is the case, and it is also the case that paraduction is a proof procedure of the system, then any statement within the system that is provable by paraduction is refutable and any statement which is not thus provable is irrefutable. Further, Gödel proved the surprising result that, in certain mathematical systems, the formula "S is consistent" is not just ineffective, but that it has a force exactly the opposite of what one might expect. Namely, if "S is consistent" is provable in S, then S must be inconsistent. This means that if we take the *London Street Tramways* as a theorem of the English legal system, then, far from being a redundant axiom, its presence shows that the system is in fact inconsistent. The next argument is an attempt to show that the decision of the House of Lords is provable by paraduction but it is not refutable. Thus the Gödel result is violated.

Can this argument be justified? There is an argument which

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²⁵. Real property cases on the old law illustrate this in profusion. 1 & 2 Fearne, *Contingent Remainders* (10th ed. 1844), abounds in examples.
brings out some of the distinctions which must be noticed between legal logic and formal logic. It has already been shown by Wang that the Gödel result has consequences in mathematics. He suggested that it may be the case that we can rely on intuitively less reliable arguments rather than believe in more reliable modes of reasoning, and also there are certain intuitive ways of reasoning about positive integers whose intuitive character we have in our formalizations not yet succeeded in revealing. It is here suggested, and the following dialogue is an argument for the claim, that paraduction provides just that informal mode of reasoning which does reveal connections and relations which formal modes of reasoning fail to reveal.53 Gödel's result remains valid so far as formal modes of argument are concerned—the procedures of mathematics and logic, deductive arguments—but does not extend to paraductive argument. This is why, in spite of appearances, the legal system may be complete and decidable and must be consistent. The further claim may be made that in spite of the Gödel result, we may find that mathematical systems and logical systems are likewise complete, decidable and consistent if the proof procedures are widened to include paraduction,55 and are not limited to the formal deduc-

53. See Stone, supra note 3, at 1015-17.
54. Provability or formality or demonstrability or deduction must, for the class of Gödel theorems to hold, be restricted by one of the adjectives “mechanical” (Wang), “recursive” (Herbrand, Gödel), “general recursive” (Kleene), “lambda-definable” (Church, Kleene), “computable” (Turing, Post), “effectively calculable” (Church), “elementary,” “elementarily definable” (Tarski), “decidable” (Hilbert), “reckonable” (Gödel), or “resolvable” (Mostowski). A standard reference is Kleene, Introduction to Metamathematics (1952) and the bibliography there cited.

Intuitively the family of concepts covered by these names attempts to pin down the notion that what can be “reckoned” by a finite machine in a finite time however large, given as much tape as it needs, will always be consistent in a consistent system. But such “reckonable” methods do not cover all the arguments of classical mathematics.

55. It is submitted that my point is given curious independent confirmation by the various proofs of consistency of elementary number theory that have been published (not that anyone of course has ever doubted this consistency). Gödel, Beth and Church have all published such proofs. But the most interesting work of this kind is Gentzen, Die Widerspruchsfreiheit der reinen Zahlentheorie, 112 Mathematische Annalen 493-565 (1936). His consistency proof for a formalism for which elementary methods are known to be insufficient, depends on the use of transfinite induction up to the first Cantor number, which renders his procedure immune to the Gödel result. Intuitively this proof is very powerful, yet it uses procedures which are not “reckonable,” and, as Gentzen himself points out in his Semesterbericht Winter (1936-37) on Der Unendlichkeitsbegriff in der Mathematik, this is what enabled
tive modes of argument.

Logic is not concerned with authorities; Waismann reminded us that there is no bullying in philosophy, not even with the yardstick of language, nor that of logic. It is incongruous that Salmond should ask for authority when he seeks the logical status of the doctrine of precedents, unless he uses "logical" and "logically possible" in an altogether fuzzy and messy way. Salmond's conclusion is also directed to authority and not argument. "This answer plainly involves the fallacy of begging the question. It assumes what it [sets out] to prove. . . . Clearly, the doctrine of precedent cannot be authoritatively supported by reference to precedent . . . ." Several remarks are pertinent here. First, the question is not properly one about logical fallacy. Circularity is objectionable when there is a definition involved, but we are not defining the doctrine of precedents, we are describing it. Secondly, formal logic does not "support" a conclusion, it entails it. Deduction is a mode of argument whereby certain conclusions are entailed or implied by certain premises. The curious feature of a decision that the House of Lords' decisions are not not binding on the House would be that it would be a pragmatic paradox such as "There are no propositions"; but the rule that its decisions are binding is not paradoxical. It may be trite. It may present a nonobvious tautology, but it is not a paradox, and there may, therefore, here be an argument in its favor. There is a further argument against this unreal possibility; it is by paraduction, not by formal logic, that it can be shown that the House of Lords' decision does support, though it does not entail, a conclusion. Paraduction is a method of argument, similia e similibus, case by case, which is appropriate to a priori, nonnecessary connection. The lawyer asked to prove the validity of the House of Lords' decision would make this point at the outset.\footnote{SALMOND, \textit{op. cit. supra} note 10, at 187.}

The recent Practice Statement calls for certain critical re-

\footnote{That authority has a limited application in law, and what the good judge and lawyer require is argument.}
marks. There are three separate observations which cast serious doubts upon its meaning and its comprehensibility.

The statement uses the word *right*: "while treating former decisions of this House as normally binding, to depart from a previous decision when it appears right to do." In such a staccato *ex cathedra* utterance it is difficult to know what rules of interpretation to apply in order to construe the meaning of the word "right." Was the Lord Chancellor speaking English or law? This involves the question whether he was sitting with the noble and learned Lords as a court. The answer to this question may affect the question whether the Practice Statement is merely an announcement about the practice or conduct of the House of Lords, or a new rule of law. If the former, it appears that the statement, however important, may operate to overrule the previous decision in the *London Street Tramways* case if, and only if, that was a decision as to the practice of the House. If it was a decision expressing a rule of law, then the purpose of this article is justified, and it would follow that that decision being a rule of law, which states that the House is bound by its own decision, can now only be overruled, reversed, or modified by statute.

If the Practice Statement expresses a rule of law, it must be supposed that the ordinary canons of construction and rules of interpretation applicable within the calculus of law must be applied to construe the word "right." If there is no previous authority the construction is not bounded but open, and the following philosophical remarks about the language game apply:

1. The application of every word is arbitrary.  
2. All words are ambiguous, that is to say they may have two or more well-settled and certain meanings.  
3. Words are vague; that is, there are penumbral difficulties which give rise to borderline cases, when there is no doubt about the central core of meaning but there is uncertainty about the application or use of a word. As used in the Practice Statement, little light can be cast upon the meaning of the word "right." It is used in some contrapuntal relationship with "in-

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justice."

There is the internal legal problem concerning the meaning and interpretation of the word “right.” Within the sharp and narrow simplicity of the Practice Statement arise “quillets of the law.” No indication is given of the use and so of the meaning of the word. We may compare the use of the word “wrong” in the M’Naghten rules. Did the accused know that what he was doing was wrong? This word had a dubious history until it was settled in Regina v. Windle that the word “wrong” meant legally wrong, not morally wrong. If the word “right” is to be so restricted, further questions arise. Does legally “right” include equitably right? If so, how far do fairness, equity and justice come into the question? We may be back with Aristotle’s discussion in the Nicomachean Ethics or Portia in the Merchant of Venice where justice means giving someone his due or showing mercy or else demanding one’s rights according to law—on the one hand, making one’s word one’s bond, paying with a pound of flesh, “The law allows it the court allows it.” Antigone’s quandary presents a case in point. According to what law or rule is the role of the word “right” to be judged: to bury her brother, according to the custom of her ancestors, or natural law, or the rules which flow from the degrees of consanguinity; or to obey the law of Creon, the law of the land, rigor juris? Examples could be multiplied from legal history.

If the word “right” means “right” according to law the question arises whether “right” according to law means “right” according to the rules of the calculus, and by the moves and maneuvers of that informal logic or ratiocination of the law, which I have termed paraduction. Is right to be determined by the precedence of precedents with regard to the doctrines of stare decisis and res judicata, the hierarchy of authorities, and the use of ratio decidendi as a means of hypothesis hunting, and the decision of the House itself in London Street Tramways? What has the Practice Statement achieved? As is shown in the body of the article, the law achieves certainty and its logic from its own internal relations and constructions using paraduction, or else from a metastatement about the system which makes consistency a prerequisite of the system. If the Practice Statement has modified either interpretation it has struck at the roots of the law, and its logic. As it is founded in inconsistency, it is not surprising to find that the statement itself contains inconsis-

63. See notes 2–3 supra and accompanying text.
tencies.

The statement suggests that it is not to affect the criminal law because of the requirement for certainty in that branch of law. In the interests of the pragmatic needs of men arranging their affairs, contractual relations, property rights and interests, and fiscal liabilities shall not be affected. This seems to leave nothing but delictal or tortious matters within the purview of the statement. Perhaps questions of legal personality may be subject to it. The immediacy, generality and scope of the statement are restricted on further inquiry.

The Statement seems to contain self-contradictions, and if not self-contradictions, then inconsistencies. This appears when the Statement is read as follows:

... regard the use of precedent as an indispensible foundation on which to decide what is the law ... as well as a basis for orderly development of legal rules.

Their Lordships nevertheless recognize that too rigid adherence to precedent may ... unduly restrict the proper development of the law.64

To reconcile this pair seems to be impossible, and if not impossible, extremely difficult, involving us in recondite and intricate arguments concerning the relationship between orderly development and the foundations of law. The proper development of the law is left undiscussed. The orderly development of rules is born self-evident and self-explanatory. It seems, on their Lordships' showing, the one cannot contain the other.

This paper has attempted to show that for law to be workable, it must have logic at the root of it; that the law of England, like logic and mathematics, has such a foundation: that London Street Tramways provided this; and that the recent Practice Statement, because of its ambiguities and limitations, does not radically alter it.

Ex abundunti cautela we may remark that the law proceeds from justice, not to it, and that if a teleology abandons logic for justice as a foundation of a legal system for a goal justifying a set of rules, then systems of law in Common Law countries will come to resemble the nightmare of Kafka's trial.