

# Fundamental Errors in Legal Logic Programming

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*It is becoming a commonplace to see substantial claims made for the utility of logic programming – especially that based on the PROLOG programming language – as both an effective programming language and a language which offers new opportunities to apply computer science to novel areas. An example of the latter is the claim made by a team at Imperial College, London to have formalised – in part – the British Nationality Act (1981). I analyse this claim and suggest that the team have a muddled view of the legal process and of the usefulness of logic programming in that field, and suggest that this incorrect perspective might well pervade other areas in which the team claim success. In effect, I wish to dispute the power of logic programming.*

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## 1. INTRODUCTION

I wish to criticise the use of logic programming in the law, not from the computer science perspective but from the position outside the usual domains of computing. For most of the claims made for logic programming are not made in terms of computer science goals (e.g. computational efficiency, efficient usage of memory, etc.) but arise from the relationship of logic programming to the extra-computational world – for example the legal world.

One justification for this criticism arises because the arguments against one of the claims of the Imperial College team are arguments from law, and in research areas such as law the matter is somewhat different from that which usually prevails in computer science: criticism and response are the order of the day; and indeed, this might well be the better method to progress, since strident criticism of one's work is often more helpful than nodding acquiescence. But more importantly, I wish to criticise their position because it is a dangerous oversimplification of a research field; because it is held in such high regard by computer scientists and funders of research; and because it epitomises dangerous anti-democratic assumptions. The argument is principally culled from law but is presented, I hope, in such a way that the non-lawyer can easily spot the difference between the claims of the Imperial College team and 'real' law. And it is important, I believe, that computer scientists have access to readable criticisms of computing research which claims success in other fields.

The criticisms I make are, I believe, of such a fundamental nature that they cast a shadow upon the claims which have been made for the power of logic programming.

The basic driving force behind the PROLOG project is the work of Kowalski and 'logic programming'<sup>1</sup> which proposes logic (and control) as a problem-solving methodology. As one example of this logic implementation on computer systems, Kowalski has shown preference for PROLOG and extensions to it. He points to the power of Horn clauses as a means of investigating the heuristic search and problem-reduction models of problem solving, and argues that logical inference provides a model which is simple and powerful.

Recently the claims which have been made have not simply been related to the proposed utility of the language, *per se*, but it has been said that this language

has the capacity to formalize the British Nationality Act (1981). The team intend to normalize the entire Act, a process which they describe as follows.

The formalisation of the British Nationality Act is an axiomatic theory similar, for example, to an axiomatisation of Euclidean geometry. In principle, any logical consequence of the axiomatisation can be generated and tested mechanically by means of a computer-based theorem-prover.<sup>2</sup>

Thus they have the view that the Act has much in common with a mathematical system; however, we should note that they do make mention of some problems.

The formalisation of the British Nationality Act is actually more difficult than we may have suggested. There are many logical complexities which have not been discussed in detail in this paper.<sup>2</sup>

We would argue that this difficulty which the project team have found is a direct result of the expectation that a piece of legislation can be so easily formalised in a truly logical format. We mean by 'a truly logical format' the 'axiomatisation' for which Cory *et al.* are aiming – the attempt to define a closed logical world which accords with first- or second-order logic. Perhaps some of their difficulty arises from a false view of axiomatisation, for the comparison of the axiomatisation of Euclidean geometry with legal normalisation is confusing; what is the connection between the two that the group see? Formalisation, even in mathematics, is still a problematical area.

Systemisation calls for more than the ability of a good librarian. For example, it was not until the nineteenth century that Pasch first formulated axioms concerning the concept 'between' which had been tacitly assumed but not explicitly stated in Euclid. Moreover, a field has too often to be developed very thoroughly before it is ripe for a systematic and rigorous organisation. The history of the calculus illustrates the point clearly: founded in the seventeenth century, rapidly expanded in the eighteenth, the calculus got acceptable foundations only in the nineteenth century and even today logicians generally have misgivings on the matter or, like Weyl, still think that analysis is built on sand.<sup>3</sup>

Thus, even with a formalised system, it is still open to change – or 'negotiation' to give a Lakatosian flavour.<sup>4</sup> There are also a variety of ways in which the British Nationality Act can be normalised. Each normalisation

might well interpret the law in a slightly different manner. Is this the type of formalisation which the group are considering, or perhaps just one idealised formalisation? If so, it seems to go against the observation of law as interpreted by the judiciary: a fact which can be seen as a matter of observation – legislation is open to different interpretation (no matter how much the legal drafting profession try to cover all loopholes – see below) and we can expect a variety of normalisations. Niblett has noted this and proposed it as an advantage – a variety of expert systems each with a different interpretation of the law which will be suitable for different clients. He writes:

It is a mistake to assume that one expert system is sufficient for one area of law. Some systems, like some lawyers, will be better than others for they will have a more refined knowledge base and superior powers of reasoning. Just as some lawyers are plaintiffs' men whilst others are more at ease representing defendants, so some systems will be tuned to the requirements of plaintiffs and others to defendants. Some tax systems will favour the Revenue whilst others will be more suited to the taxpayer.<sup>5</sup>

Of course, expert systems technology is currently to the fore, and the team have suggested that PROLOG and law offer a combination which other IKBS areas do not – i.e. ease of the 'knowledge engineering' task.

The formalisation of legislation by means of rules has almost all the characteristics of an expert system. It differs, however, in one important respect. In a classical expert system, before knowledge can be formalised, it has to be elicited from the subconscious [*sic*] of an expert. This knowledge elicitation problem is generally regarded as the main bottleneck in the construction of expert systems. It is entirely absent, however, in the case of legislation which is already formulated and written down. Thus the use of expert system techniques for representing legislation has virtually all the advantages of expert systems without the attendant disadvantage of the knowledge elicitation problem<sup>2</sup>

However, even this claim is watered down by the team, as can be seen from the reported comments of a member of the team:

Cory explained that 'you have to begin with the conclusion, the meaning of the clause; this isn't easy to find or express'. ... The student who produced Horn clauses such as these had the most tedious job of all. 'The systems analysis is all done on paper – there's no getting away from writing out all those And/Or clauses', said Cory. [Quoted from *Datalink*, 13 February 1984]

We would argue that the normalisation of legislation is not as simple as Cory *et al.* first suggested. Rather, that it is a very mentally demanding task which requires considerable skill (which legal training develops and encourages). This skill is that which allows the lawyer to interpret legislation – but until this has occurred the legislation has no meaning and it might as well be buried in the 'subconscious', wherever that might lie.

However, these arguments are not the most forceful that we can use to belie the claimed success of the PROLOG British Nationality Act (1981) project; the most forceful are those empirical arguments found from looking at the problem of rule-based or logic-based law.

## 2. CLEAR RULES

It has long been held that the very notion of just what a legal rule is is problematical. However, H. L. A. Hart,

once Professor of Jurisprudence at Oxford, has suggested that there are basically two kinds of rules – those which control the behaviour of people (primary rules), and those which regulate those (e.g. the judges) who apply the first kind (secondary rules). The legal system, to Hart, is composed of rules which classify, but carry this out to an extent depending upon the fact situation to which it is applied. As Hart claims:

All rules involve recognising or classifying particular cases as instances of general terms, and in the case of everything which we are prepared to call a rule it is possible to distinguish clear central cases where it certainly applies, and others where there are reasons for both asserting and denying that it applies. Nothing can eliminate this duality of a core of certainty and a penumbra of doubt when we are engaged in bringing particular situations under general rules.<sup>6</sup>

One of the most basic assumptions of this 'rule-based' school is that there is such a thing as a 'clear rule' – it is a rule which can, to a large extent, be applied without further thought. It is, to Hart, the core of certainty which 'nothing can eliminate'; to logicians it is the major premise from which the judicial argument must and does proceed. We must point out that when we speak of a clear rule here we can, but do not necessarily mean a logical sentence; we could speak about a piece of text which might run as:

'Read the rest of this text'

What is important about clear rules is that they can be written and interpreted with the minimum of confusion and that they almost (but not quite) 'step forward and claim their own context'. Also, and this is correlated to the lack of confusion, they are held to be commonly the case: these are the rules of law over which there is no or little argument. It is only in what are termed 'hard cases' that there is a problem of interpretation (involving the penumbra of doubt); in the easy cases the core of certainty is to the fore.

I shall suggest that the very idea of a clear rule of law is an invalid idea, and that it cannot be used successfully to provide legal expert systems which can predict real judicial decisions. Therefore, since the Imperial team's approach is the epitome of the 'clear rule' approach, their attempt to build a system composed of these rules must fail.

## 3. A CRITIQUE OF CLEAR RULES

'Rule based' philosophers of law posit that we can view the law as a collection of rules which seem, at least to me, to have 'an existence of their own'. It is not unfair to see these philosophers as agents of a formal or technical view of the law, since they hold that justice is best arrived at by 'applying the rules' in a formal and technical manner. The problem I see with this view of legal rules is that it ignores the social determinators of the process: by presenting a technical methodology as to how the judiciary ought to reason they present an essentially conservative view (a point which I take up when looking at the PROLOG project again, below) which bears little relation to empirical evidence. By empirical evidence, I mean the written case reports – the substantive law – which present a completely different story. By looking at how the judiciary actually adjudicate, we can see that

there is very little evidence for the notion of a clear rule which they can apply without further thought.

My first argument is borrowed from Moles.<sup>7</sup> Later I develop my own argument pertaining to the British Nationality Act (1981). Briefly expressed, Moles suggests that we cannot look at 'the rule' in isolation – we can only see its existence within a social context since it depends upon its interpretation for the context in which it is to be applied. I shall later return to just what this means for legal rule-based expert systems, for now I shall try to re-present his argument concisely.

Moles takes a piece of legislation which might on first appearances appear to be the statement of a clear legal rule. The legislation (for those who might wish to formalise it) is a provision from the Domestic Violence and Matrimonial Proceedings Act 1976 S1 (1).

- S1 (1) Without prejudice to the jurisdiction of the High Court, on an application by a party to a marriage a county court shall have jurisdiction to grant an injunction containing one or more of the following provisions, namely –
- a provision restraining the other party to the marriage from molesting the applicant;
  - a provision restraining the other party from molesting a child living with the applicant;
  - a provision excluding the other party from the matrimonial home or a part of the matrimonial home or from a specified area in which the matrimonial home is included;
  - a provision requiring the other party to permit the applicant to enter and remain in the matrimonial home or a part of the matrimonial home; whether or not any other relief is sought in the proceedings.
- (2) Subsection (1) above shall apply to a man and a woman who are living with each other in the same household as husband and wife as it applies to the parties to a marriage and any reference to the matrimonial home shall be construed accordingly.

Now this seems, at least to me, to be a relatively clear piece of legislation. We might think of it as an example of Hart's secondary rule with a core of certainty and a penumbra of doubt. No doubt the legislators who drafted it, too, would have considered it relatively clear. But did the judiciary think so? Unfortunately not, as Moles points out. The relevant cases in the argument are *B. v B.* [1978] 1 All E.R. 821, *Catcliff v Jenkins* [1978] 1 All E.R. 836 and *Davis v Johnson* [1978] 1 All E.R. 841.

Moles first points to the case of *B. v B.*, where the trial judge took the view that it was unreasonable for Mrs B. to continue living with Mr B. (Mrs B. having left the joint home, of which Mr B. was tenant, leaving the children there) and ordered Mr B. to leave the home within 14 days. Mr B. appealed, an appeal which was allowed, the decision being arrived at on the fundamental issue of the proper construction of S1. A summary of the judgments is:

- (1) the judges all agreed upon what the main facts and points of law were;
- (2) the approach to the meaning of the legislation is technical – it does not concern itself much with the social conditions of the case – only with the meaning of the law;
- (3) that technical investigation of the law is mainly concerned with trying to fit S1 into other existing legislation (in fact primarily of property rights, and the jurisdictions of the High Court and County Court).

In effect the bench decided that the provisions above had very little real effect – that although there existed a clear rule, it was of little consequence since other clear rules negated it. This was markedly different from a second case which came before the Court of Appeal within a few days of the delivered judgment in *B. v B.* Once again, in this second case, a woman had left the joint home which was tenanted by the male partner.

In this second case, *Catcliff v Johnson*, the trial judge had ordered removal of the male from the home (adding power of arrest without warrant to the order). The Appeal judges overruled this order in a similar manner to that of *B. v B.* – that is, in a technical light without any real investigation of the social facts. Yet, whilst the first appeal judges had interpreted S1 to have little real effect, in *Catcliff v Jenkins* they found that it did in fact have effect – it was only effective against a person with no right or interest in the property, they decided, else it would have a transfer of property effect. And such a situation, they seemed to imply, could not possibly be.

Thus, we can pause here, and note that so far the provision has been interpreted in two separate cases in two separate ways. The judicial interpretations have, I would contend, little relationship to my view – as a computer scientist let it be admitted – of what the provision is meant to do. But note that each judge was certain of what the relevant rule was.

The matter arose again within a month in the Court of Appeal, in the case of *Davis v Johnson*. Davis left the home with her two-year-old child and had Johnson ordered to leave. Johnson applied to have the order lifted (after *B. v B.* and *Catcliff v Jenkins*); it was, and Davis returned to the woman's refuge.

However, on this occasion the result was somewhat different, with the Court of Appeal rejecting (strongly, in fact: 'I am afraid that the judges sitting in *B. v B.* must have misunderstood the law as it is applied in the Family Division') the decisions of *B. v B.* and *Catcliff*.

Rather than looking at the purely technical way in which the provision relates to other legislation and substantive law, the Court of Appeal in *Davis v Johnson* looked to the broader perspective and the social circumstances. In effect, they looked at the same provision as the two previous courts had, but discovered that there was a different legal rule! Or, to be quite precise, four went for this different rule, and one stated a preference for that of *B. v B.*

We can present an empirical account:

There is first the layman's interpretation – 'a', we shall say – of the rule (we shall give it a count of 1 – a conservative figure). Then comes the case of *B. v B.* – 'b' – where a different interpretation of the legal rule arises (we shall give it a count of 3, one for each of the judges on the bench). Then *Catcliff* – 'c' – where another interpretation arises (once again a count of 3 for the unanimous members of the bench). Then *Davis* – 'd' – where a specially constituted Court of Appeal of five produce two rules (4 for 'd' and 1 for interpretation 'b').

In total then, our 'clear rule of law' has a scorecard of:

Interpretation	Score
a	1
b	4
c	3
d	4

so where, I might ask, is the core of certainty and the penumbra of doubt which we might expect to find?

Cynically, I might suggest that there is a large penumbra of doubt and no core of certainty.

Now one argument which might be put against this is that, 'Yes, clear rules are not always clear – but they are clear until the judiciary change them'. In which case I would say, there is no differences between our positions – simply that you call a clear rule something which, to me, isn't clear! To me, the existence of the rule depends upon the personal view of the judge positing that rule – it is created, discussed, manipulated by the judge as an abstract concept. It is not pulled out from the law reports and legislation (or expert systems) on that judge's bookshelf – it has no concrete life which leads to it being spotted automatically by any number of judges.

Another argument might say, 'Yes, there are parts of the law which it is very difficult to formalize; we should therefore limit our attempts to find clear rules to certain sub-parts of the law. Perhaps tax law'. This is of course an argument which is presented by McCarty.<sup>8</sup> My argument rests upon the assumption that there is no difference between any judicial interpretation of legal rules, whether they arise from tort, contract or commercial or corporate matters. The problem of finding the clear legal rule in any of these areas is insurmountable, my argument states, because there is no clear rule which cannot be overruled, forgotten or created by the judiciary. Take another example from Moles, an example which relates to tax cases, one of those cases which McCarty might consider most tractable. The case is *Vestey v Inland Revenue Commissioners (nos 1 and 2)* [1979] 3 All E.R. 976.

*Vestey* concerned access to a foreign-based trust and income tax due upon income from the fund. The Crown claimed that where an individual had either received or had power to enjoy the income from such a fund, the person became liable to taxation on the whole of the income of that fund no matter how much had actually been paid. The previous ruling in *Congreve v Inland Revenue Commissioners* [1948] 1 All E.R. 948 had the unanimous support of the House of Lords upholding a unanimous Court of Appeal (a sure indication of a 'clear rule'), yet in *Vestey* it was overruled. Moles points to the importance of this decision:

Thus change was called for, and if there was any doubt that the change was substantial, rather than marginal, it would probably be dispelled by the opening words of the article by Anthony Sumpson in the British Tax Review: '*Congreve v Inland Revenue Commissioners* had stood for nearly 32 years as one of the great landmarks in the development of the law enacted by [the relevant section of the Act]... Now *Vestey v Inland Revenue Commissioners (nos. 1 and 2)* has come like an atom bomb to blow *Congreve* away and obliterate all the fortifications in defence of the Revenue which had been constructed upon the foundation of that case.' We all know that atom bombs are not used to make minor adjustments.<sup>7</sup>

Yet another tax case *W. T. Ramsey Ltd v Inland Revenue Commissioners* [1981] 1 All E.R. 865 is dealt with by Moles. Briefly, *Ramsey* was concerned with tax avoidance, whereby a series of transactions were carried out in order to reduce a tax commitment. The previously held ruling was that each step in the whole transaction process must be seen in individual terms – if each individual transaction was legal, then the whole transaction was legal – that is, the tax avoidance scheme was legal. However, with *Ramsey* the court took a

decidedly different tack – they overruled that previous clear rule, and stated that it was now valid to look at the individual steps as being part of one larger transaction. Looked at this way, the tax avoidance scheme was considered illegal.

Mole's strategy of actually looking to the weekly reports is an instruction which is worth more than the individual examples he cites (it is surprising how many philosophers of law manage to get by on a handful of cases from the pre-war years). By taking up Mole's strategy, any number of useful examples can be found.

Of course, the cases we have borrowed from Moles and presented here have all been successful overrulings of previously 'clear rules'. Examination of case reports leads me to suggest that this rule-breaking, manipulative process is continuous, though not always successful; many are the attempts of members of the judiciary to overrule previous decisions which are not successful (and this is related to my position that the very dichotomy of 'easy cases' and 'hard cases' is false). I can present one such case at the attempt by Lord Scarman (in *Sidaway v Bethlem Royal Hospital Governors* [1985] 1 All E.R. 643) to overrule the 'Bolam Rule', a rule which holds that doctors, to act professionally, need only behave as a responsible number of their fellow professionals might reasonably behave in that situation. Scarman made specific reference to judicial decisions in certain states of the USA and in Canada; he also made specific reference to secondary materials. For instance an academic article, of which he said:

This case, which has now been approved by the District of Columbia Appeal Court in *Crain v Allison* (1982) 443 A 2d 558, is discussed learnedly and lucidly in an article by Mr Gerald Robertson 'Informed Consent to Medical Treatment' (1981), LQR 102, on which I have drawn extensively in reaching my opinion in this appeal. The author deals so comprehensively with the American, Canadian and other countries' case law that I find it unnecessary to refer to any of the cases to which our attention has been drawn, interesting and instructive though they are, other than *Canterbury v Spence* and a case in the Supreme Court of Canada, *Reibl v Hughes*.

Unfortunately for Scarman L. J. his view of the rule was not accepted by other members of the Court, and that new and revised during did not come into being. But his comments tend to imply that Hart's secondary rules are not quite so slavishly followed, if at all, as he might imagine.

This critique, it should be noted, does not say that the concept of a legal rule is without use. I am not saying that we should not speak of legal rules. What I am saying is that we should be careful to remember that legal rules are objects of discourse, not objects with a concrete nature which we can mysteriously formalise and 'find' in the legislation or the weekly law reports.

I propose, then, that this view of law is not one which is consistent with computer systems based upon rule-based methods because these systems present only 'concrete' rules – they cannot present intuitively arrived-at rule-breaking strategies. Neither, as a corollary, can they present rule-supporting strategies, which are, in both criminal and civil litigation, a necessary opposition to the attempted rule-breaking of the appellant's or defendant's counsel.

It should also be noted that this idea of a clear rule has far-reaching implications, for we can see the same

strategy involved in the logical description of law as we see in the use of clear rules. *In fact, a logical sentence is just another form of clear rule* – it contains no contextual information, it is a piece of law which is supposed to explain its own context and which, its proponents have argued, is not open to negotiation. Logic programming representing legal rules is, therefore, the epitome of a corpus of clear rules – there exists no better example.

#### 4. THE OUSTER CLAUSE

It is our contention that logical methods are not appropriate for handling the law, since the real problem of law is not the clarification of individual legal terms from the legislation, but the control of the judiciary. If we wish the judiciary to apply the rules of law with the purpose intended by the legislators, we cannot do so by giving them 'clear' rules of law since they will simply use 'common law' arguments to interpret these terms. And since the common law exists only as a large collection of legal texts and commentaries it is not difficult to find supporting evidence for any position which the individual judge might wish to hold. Note, for example, how Lord Scarman in *Sidaway* went to an academic article concerning law in North America to bolster his argument: legal textbooks would not normally suggest this as a correct source of U.K. common law, but that didn't stop Lord Scarman.

Legal expert systems are, of course, involved with prediction of the judicial decision. And such prediction can only occur when there is a clear pattern of past events: some have suggested behavioural techniques.<sup>9</sup> Others have suggested that prediction can only occur when there is a clear formalisation of the legislation which the judiciary cannot but fail to understand – they will be compelled by clarity to apply the rules in the desired manner. They would claim that strong prediction of what 'the law is' can be achieved from a proper normalisation of the law. Clarity of legislation – they would claim – is the aim which is important.

We intend to show that even the consistent formalization of one Act – never mind the 'law' as a whole – is problematical by recourse to the idea of an 'ouster clause'. We shall outline what it is, give a brief description of the way it has been applied and then point out that one exists within the British Nationality Act (1981); the existence of this brings into substantial doubt the claim to be able to formalise the Act.

Administrative law is, broadly, the law relating to the control of governmental power. Thus this law deals with the powers which departments of a government have, and how they are to be applied. The British Nationality Act (1981) would be described as one piece of administrative law, dealing as it does with the way in which the Home Secretary (or his agents) can dispense or deny British citizenship. Administrative law is thus concerned, in part, with power and its allocation.

In any application of power, it is to be expected that there will be disagreement over the way in which it is applied. There thus exists the need for a body to adjudicate upon the conflicting claims; claims which may well relate to payments made by the social welfare agencies, the regulation of landlord-and-tenant relationships, or to provide employment protection. This adjudication could have been left to the existing court

system as the body of administrative law built up, but there were a variety of reasons why it was not left to the court system. First was the view that the court system would not be able to cope with all the disputes, and that the cost of servicing these disputes would be substantial. There was also, as one commentator suggests, 'the feeling that the courts might not be altogether sympathetic to the content of some of the legislation, having restrictively interpreted similar legislation in other areas'. Whatever the reasons, it was decided that independent (from the government departments, that is) tribunals were the better alternative to the court system. One such area which has these tribunals is immigration.

Whatever the reasons for the use of tribunals, they had the practical effect of attempting to keep the judiciary out of public policy operation. This restriction on the judiciary was not welcomed by them in the inter-war years, was accepted in the war and immediate post-war years, and is now subject to much judicial hostility as most commentators agree (see for example, Ref. 10). The problem for the legislators has been to keep the judiciary out of this public policy operation; the method which they have attempted to use has been the **ouster clause**. The ouster clause is a piece of text which has been inserted into the legislation with the intent of precluding judicial intervention. However, it has been noted that these formulae have had little effect – they have been interpreted so as to minimise their effect or overruled by the judiciary.

Now we have been arguing that the legal process is principally a process of social negotiation; this negotiation occurs, with regard to ouster clauses, in a running battle between the legislators and the judiciary to formalize a clause which will have the desired effect. Thus not only the meaning of the words which are contained within the clause but also the *practical effect* which they might have has been taken into account; the legislators have understood that the legal text is not sufficient, but that the expected countering strategies of the judiciary must be taken into account – a perfect example of negotiation, we would argue. As examples of some of these clauses we can look at those which have attempted to exclude the judiciary completely; others have been tried which attempt to limit judicial intervention rather than exclude it completely. We use the classification from Craig, (1983) and his analysis of the court's response.<sup>11</sup>

**Finality clauses.** These are clauses which attempt to render the decision of a tribunal 'final' or unassailable. The courts gave these short shrift by a variety of methods – for example, Denning L. J. concluded that they only affected appeal, not judicial review. Even this limited effect of the clauses is now viewed as out of date.

**'No Certiorari' clauses.** Craig (1983) p. 518, writes of these clauses: 'Part of the reason for legislative dislike of judicial review was that the courts would overturn decisions for reasons redolent of a Dickensian caricature. Technical error was seized upon and verdicts quashed with an excess of vigour that bordered upon the pedantic. The legislature responded in a number of ways, one of which was the insertion of 'no certiorari' clauses within statutes. Judicial response to such terms was not wholly aggressive: the courts acknowledged that they had been overtechnical. Jurisdictional defects continued to remain unaffected by 'no certiorari' clauses; the courts still struck them down.'

**'Shall not be questioned' clauses.** This type of clause means what it says, and was often used in conjunction with 'no

certiorari' clauses. Of them, Craig writes (p. 520): 'Any hope that persevering parliamentary draftsmen might have had that this formula would work where all else had failed was to prove unfounded.'

'As if enacted' and 'Conclusive Evidence' clauses. These were relatively crafty means of putting a statutory order or a minister's decision on the same level as a piece of legislation and thus, since the judiciary cannot overrule legislation, immune from review. It had some success in the early part of this century but has passed out of fashion. Craig (p. 521) anyhow considers that it is unlikely that it would be successful if brought back into usage – 'in the light of the interpretation placed upon other attempts to exclude review, one would hesitate to put too much reliance on them'.

So, we argue that there is much in law which is not part of the legislation; the legislation, although clearly stated, does not seem to have much effect upon judicial review of administrative and tribunal practice. But the PROLOG team think otherwise. They believe that a useful predictive expert system can be built by simply interpreting the legislation and inputting this into a logic program. We argue that this is naïve, for the British Nationality Act (1981) too has an ouster clause and, as we have seen above, ouster clauses seem to have little or unpredictable effect. No only that, but the section containing the clause is self-contradictory – in logical terms – and would provide a substantial problem to logic programmers. We argue, then, that even if the PROLOG team did manage to fully formalize the Act, it would have little predictive power in that part, at least. This, we argue, is a strong rebuttal of the ability to axiomatise an Act of law.

The ouster clause in the British Nationality Act (1981) is in Section 44 (2); the logical contradiction is between 44 (2) and 44 (3).

44 (2) The Secretary of State, a Governor or a Lieutenant-Governor, as the case may be, shall not be required to assign any reason for the grant or refusal of any application under this Act the decision on which is at his discretion; and the decision of the Secretary of State or a Governor or Lieutenant-Governor on any such application shall not be subject to appeal to, or review in, any court.

44 (3) Nothing in this section affects the jurisdiction of any court to entertain proceedings of any description concerning the rights of any person under any provision of this Act.

We suggest that only by recourse to an understanding of the debate over ouster clauses can the logical contradiction between the two clauses be understood. That will always be outside the ken of an expert system which contains only axiomatised legislation.

The courts have, for the record, already (given the time scale) carried out judicial reviews of several cases. Of course, this does not mean that the reviews have been successful for those appealing: as Griffith has pointed out, the courts have not been too keen to side with those from, for example the Indian sub-continent.<sup>12</sup> But that does not remove the fact that the courts have ignored Section 44 (2) of the Act.

The British Nationality Act (1981) has only recently come into force and so there is only a limited understanding of how the judiciary will react to it; we might expect other differences between the legislation and the interpretation of the legislation to appear. In the next section, we argue that even if the legislation was clear and the judiciary did follow it precisely (if such a precision

could exist) there are still problems relating to 'justice' which arise from the PROLOG perspective.

## 5. CONSERVATIVELY APPLYING THE RULES

One of the most forcefully presented arguments of the positivist legal philosopher has been that of the relationship of morality to law. They have presented the argument that the technical application of the rules of law is the way in which justice is best achieved. This concern with justice should, we hold, be a matter of concern to all who are involved in the legal process; even those of us in computer science or logic who have an interest in the law should be concerned with its moral application, since many of us entered the research field with a strong inclination to provide tools which increase access to justice, not simply to raise the (not unsubstantial) earning power of the legal practitioner.

The question, though, which is raised by positivism is: is technical application of the rules of law the best way to achieve justice? Or might there be some other process which we can concentrate upon which has a 'higher moral worth'? Legal logicians are certainly some of those who are most adamant that justice is best found through logic – using logical reasoning, proceeding step by step through the legal norms. This a view we reject; primarily because it frees the judiciary from the responsibility for any of the judgements which they arrive at – they can say, as they do, 'I would like to award judgment to X, but unfortunately I cannot'. Judges in our view should be held responsible for their adjudications. They should apply the law, not in a formal manner excluding the social factors and context, but as the legislators and society would wish. We should remember that the War Crimes trials after the second world war were notable for the number of defences which claimed, 'I was only applying the rules'. Such a defence was not accepted then; and it should not be acceptable now.

The problem is particularly important, we believe, to computer scientists entering the field, because it is well known that 'scientification' and legitimization can often be achieved by the presenting of contentious information in the form of a computer program. We can point to the study by Bloomfield<sup>13</sup> which demonstrates how the computer-based urban model prepared by J. W. Forrester (the inventor of the computer core memory) was given extra legitimization in the eyes of administrators. The model proposed that by demolishing low-cost housing in American cities, the poor would be removed from the cities, thus solving many of the problems of urban deprivation. Of course, because the model only dealt with the city in isolation, it provided little information on what was to happen to these dispossessed poor.

We believe that the presentation of the PROLOG project is just as problematical. The language which has been used to present the system is appealing to those who might wish a system which uncritically presents their view as a logical consequence of the Act. There is to be no escape from the logical compulsion – by interacting with the program people will discover whether they are British citizens or not. This is, the extreme cynic might suggest, an ideal explication of the governmental position; that extreme cynic might suggest that a government given the opportunity to fund research



which presented its law as closed to negotiation or to fund research which was critical of this view would choose the former. But this is not to suggest that the PROLOG team are necessarily government-funded apologists for right-wing immigration policy. It is, perhaps, more to do with the failure of current jurisprudence to escape the errors of positivism than a conscious decision on the team's behalf to persuade potential users that 'the law's the law'.

We shall emphasize that 'the law's not the law' by looking behind the legislation of the British Nationality Act (1981) to suggest that we cannot simply accept a legal rule and its application without further discussion. Thankfully, there are some (though limited) ways and means whereby a more just solution can be arrived at.

It has been noted by many (non-radical) legal commentators on British immigration legislation that there are implicitly racist overtones involved. For example, one of the stated primary aims of the legislation has been to reduce the incoming numbers of immigrants so that employment prospects for those already in the country are not reduced; yet, if this were so, the commentators have argued, those Irish from Eire would have been subject to the same immigration policies prior to joining the EEC. In fact they were subject to no restriction whatsoever. Also, these same commentators have pointed out that even those who are fully qualified for British citizenship cannot migrate to the U.K. without proper documentation: such documentation can be obtained within a few days in countries such as Australia and New Zealand, but some 12–18 months or more in, for example, the Indian sub-continent. The point is that a logical formalization of the British Nationality Act will tell us nothing about these factors.

As well as the legislation having an implicitly racist bias, the British courts have been keen to support the legislation (which is different from their approach to, say, tax legislation). Griffith<sup>12</sup> has noted the generally limiting view they have of their interventionist ability in immigration law; this limiting view has been upheld in various appeal cases. This can also be seen in those cases which have appeared dealing with judicial review of the British Nationality Act (1981): for example, it could be argued that the current entry clearance required for entry to the U.K. need not necessarily be provided in the country of origin, since there is no place in the legislation which says that the potential immigrant must *arrive* with this documentation. The courts, though, have supported the Home Office policy as implemented by the Immigration Officer and stated that 'a current entry clearance was required... before she entered this country' (*R. v Secretary of State for the Home Office Department ex parte Choudhury*, Court of Appeal (Civil Division), 6 December 1984). Thus the courts held that the woman in that case had to return to the country of origin to await proper documentation being prepared, rather than wait for this at Heathrow.

The conjunction of racist legislation and a compliant judiciary might, it could seem, bode ill for any potential immigrant from India or Bangladesh. However, as is currently being shown, there are means to overcome this bias against certain (i.e. coloured) immigrants. The means comes from European legislation; this indicates further that when we wish to analyze the law and how we should react to it, we cannot simply look at one piece

of legislation (and formalise that) and expect it to answer all our questions – there are often strategies which the legislation would have us believe do not exist. Logicians, therefore, should not be the first port of call for advice if you have immigration problems, I suggest.

British subjects have access to the European Court of Human Rights. Now, whilst this court has no authority with the legislature, it most certainly does with the Crown, who have agreed to be bound by the decisions and practice of that court. The European Court has recently found that the immigration rules breached Article 13 of the Convention on Human Rights because they discriminated against women. Under the rules, foreign men with full residency rights in the UK could bring in their wives or fiancés, but foreign women could not. At one hearing the British Government claimed that the purpose of the rules was to protect the domestic labour market at a time of high unemployment. The Court ruled that this was a legitimate aim, but provided insufficient grounds for justifying a breach of Article 13.

These rules are not directly a part of the 1981 Act, but they do indicate that the word of the legislature is not final. Given the time lag between the beginning of an appeal or judicial review to possible judgment at the European Court in Strasbourg, we might expect the 1981 Act to be soon commented upon by this Human Rights court. The logic programmers with their 'logical consequences' can tell us nothing about the likely eventualities of such a process. Hence, I can only reiterate the advice to potential immigrants or those concerned with their nationality to discuss the problem with an expert; not with a legal rule- or logic-based expert system. The advice they would get could not possibly be worse.

Finally I shall return to the earlier-mentioned cases. The early Appeal Courts made little mention of the physical factors which were involved in the cases; for example, in *B. v B.*, Bridge L.J. related the facts:

In the last year or two the relationship between these two parties has seriously deteriorated. There have undoubtedly been incidents of violence between them... It is unnecessary to go into the matter at any length. In short, Mrs B's case was that Mr B. had behaved so badly towards her that the relationship between them was at an end and there was now no prospect of reconciliation.

When, in *Davis v Johnson* the social and physical factors were taken into account, we learn something of the rationale behind the making of the legislation, a point noted by Denning M.R. about the previous decisions:

The two decisions aroused consternation. Protests were made in responsible quarters. It was said that Parliament had clearly intended that these women should be protected; and that this court had flouted the intention of Parliament. So much concern was expressed that we have called together a full court – a court of all the talents – to review those two decisions; and, if satisfied that they were erroneous to correct them.

The social factors were also, somewhat less formally, yet more graphically described by Denning M.R.:

The judge said that there were two instances of extreme violence of a horrifying nature. On one occasion the man threatened her with a screwdriver. He said he would kill her and dump her in the river. He kept a chopper under the bed and threatened to chop her body up and put it into the deep freeze.

My point is, that we should be careful lest a desire for formality makes us forget that there is a world in which legislation and the legal process are of paramount importance.

## 6. CONCLUSIONS: LOGIC PROGRAMMING

I believe that I have cast substantial doubt on the claimed success of the Imperial team in their use of logic programming in law. The next question should be, whether the team have made similar claims in other areas outside computer science which are open to the same challenge. I suggest that they may well have – their view

of the mathematical process is beginning to receive some press and discussion in seminars, although it has not appeared (to my knowledge) in published work. Just as the team have ignored the 'real' aspects of law, I would claim, it seems on first sight that they have ignored the 'real' aspects of mathematical thought which are brought out more clearly by a discussion such as Kline or Lakatos.<sup>14,4</sup>

I would argue that the problems of logic programmers are the result of a false epistemology: they see the world in terms of a computational model and fail to stand outside that model. Thus, whenever they attempt to apply their model to the real world, they will always fail. For the world is not a logical world.

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