Poison (1976) pointed out 'Nothing can totally replace a pair of open eyes, a sharp pair of ears and a quick pair of hands, all skillfully trained to act in response to well programmed computer we all have between the ears'. But, the acceptance of computers and their service in the field of criminal justice system is ever increasing. Computers are in fact indispensable to many operations in which they cannot be expected to exercise responsible judgement (Whisenand et al 1970). But judgement is no better than the information it is based upon or the mind that formulates it. The methods of artificial intelligence could radically improve the judgement. even if they are doubtful judgements, the knowledge could be scrutinized and debated by human experts for the better judgement.

Artificial intelligence programs have all the elements of an area which might allow exploitative sale methods. If cases come before the courts which involve artificial intelligence there are no established principles on which the judgements may be based. In decision making programs, the consequences of one's work are someone else's concern. So a professional working in any capacity shall ensure that the interests of the user are observed and protected. Full attention must be given to the sensitivity and security of data and the conflicting requirements of privacy and security. As given in the B C S hand book on 'Code of Practice' (Whitby 1988), all professional persons
working in Artificial Intelligence shall take all possible steps to ensure that customers, other professions and the public are not misled as to the degree of intelligence or competence possessed by artificial intelligence systems.

Artificial intelligence is a sufficiently powerful technology to alter the domains to which it is applied. Successful applications will only be found when artificial intelligence professionals adopt to the realities of an application area. In order to progress from a academic research to successful applications it is necessary for both bodies of professionals to compromise, which itself is not an easy task.

The introduction of a knowledge based system in the domain of forensic science may be seen by some forensic scientists as an intrusion upon their professional domain. But such objections are going to be short lived as experienced in other domains such as medical diagnostics and engineering. The image of forensic scientists and law enforcement agencies may even be enhanced by this use of sophisticated technology.

If decisions are going to be taken by the law enforcement agencies from the knowledge based systems alone, it may have the potential to do injustice to an innocent, similar to a medical consultation system used by a skilled personnel which have the potential to injure patients. A computer may suggest a faulty judgement or fail to utilize the rule in the knowledge base or miss an essential fact in the data base.

When a software fails there may be legal problems. The responsibility would be obscure, since there is no
reliable way to determine who was at fault. In such a case the question of liability will arise in a lawsuit (Brannigan et al 1981). The main issues in such a case are whether a program is a product or a service and whether the error will be attributed as a design defect or a production defect.

If the program are considered as a product then manufacturers and distributors will be held responsible. If the programs are considered as services, then the producers and users will be liable (Tim Chard 1988). Medical computer programs or a knowledge based decision making program for a domain like forensic science do not fall clearly in to either of these categories, so dispute is inevitable.

If the error is considered to be in the design of a program then the liability can only be assessed after the review of the possibility of alternative designs. Furthermore, a court may have to decide which of the many creators of a program - Human expert, knowledge engineer, producer, seller or the user - might have been responsible for the plaintiff's injury. If the detection is in production, then liability exists even if due care had been exercised in the production process.

In the use of medical diagnostic expert systems the general practitioner himself is responsible for the defective advice obtained from a expert system even though the fault lies within the expert system (Bainbridge 1991).

Another problem is security. Even though the implemented expert systems are secured, an illegitimate user can successfully access data without authorization, to
change the numeric values of uncertainty factors or can substitute a program for the original program or module.

The evaluation of an artificial intelligence systems has always been an important part of their implementation. The evaluation of a system can be done as a subjective assessment of the research contribution of a developmental system or as a validation of the system's knowledge prior to possible use or on a operational consultation system. Whatever may be the level of evaluation, the important factor of an evaluation's success may be the initial choice of an appropriate domain and of an appropriate role for the system to play in that domain.

The knowledge and advice of the expert system on forensic science cannot be evaluated against a standard, similar to a expert system on medicine, because expert's decisions may involve a great deal of subjective judgement and there may also be great practice variation. Hence it must be necessary to decide whose individual or collective practice best serves as an appropriate standard for comparison.

An expert system for any forensic science applications must make fast and accurate decisions based on incomplete and sometimes conflicting intelligence reports. By using a truth maintenance system, the computer can be made to think through various hypothesis and weed out the ones that prove to be false. Use of probabilistic reasoning strategies, enable a computer to mimic common sense. The inclusion of fuzzy logic may reduce the number of rules required to act on a problem.
Any field in the domain of forensic science often involves the handling of data mixed with large amounts of knowledge. Extraction of the relevant details requires interpretation and judgement. Sorting through cases in search of a relevant precedent is not the sort of task which could be assigned to existing computer systems. Any automation of this work will depend upon the successful solution of some of the research being conducted in artificial intelligence at present. So, programs that can introduce intelligence into the searching of large databases will find a ready market with forensic scientists, lawyers and law enforcement authorities.

Artificial intelligence can bring a new methodology to certain problems which have been in the domain of other traditional disciplines. If the knowledge based programs are going to be introduced as a method of augmenting the performance of human experts rather than as a method of replacing them then this approach may have more to offer in the domain of Forensic Science.

In any domain, if expert systems are to succeed, then users must be consulted. The willingness and availability of experts to participate directly and strongly in the building of knowledge based systems are the prerequisites for success. Reliance of any single expert can either create blind spots in the knowledge base or result in a system that will not have users. In a domain like forensic science the users may be an expert or a law enforcement officer, a lawyer or a jury who want to verify the genuinity of a human expert. But it is a known fact that it is extremely difficult to get agreement among experts.
Even though in artificial intelligence previous work is often not directly usable in a new work, today several easy to use software tools reduce the task of building knowledge based systems which would have required specialized artificial intelligence workstations and knowledge of some artificial intelligence programming language. Expert System development tools have varying security devices built into them, which reduces the risk exposures of computer programs. It is better to use a tool, particularly group decision support system tools to facilitate knowledge acquisition from multiple experts (Nunamaker et al 1987). Tools avoid errors from missing information or misinterpretation of expert statements, enable experts to work simultaneously and to access comments from each other, preserve anonymity of individuals, prevent a dominant person from imposing ideas on the entire group of experts, simplify the conflict resolutions and decrease the time required for knowledge acquisition.

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