CLAIMS ANALYSIS AND COMPUTER REASONING[a]

Discussion by William G. Salomone,[5] M. ASCE

INTRODUCTION

Although the authors should be commended for the time and effort spent on developing their claims analysis approach using a computer model, the writer is concerned about the optimism they have expressed concerning the potential of computer modeling to aid owners, engineers, and contractors in their efforts to negotiate claim settlements and the false sense of reliability they convey to the readers.

Unlike the success stories the authors have described for medicine (MYCIN, PUFF, MOLGEN, DENDRAL, and CRYSALIS) and mineral exploration (PROSPECTOR) that involve predicting outcomes from specific scientific principles, the set of rules for predicting legal outcome is not a closed set nor is the application of these rules quantifiable. The authors have found this out when in the number of cases tested using DSCAS, they found the valid reasons given by DSCAS for no entitlement were not identical to those determined by the BCA.

The authors admit that statutes, common law and legal interpretations (the set of rules required for legal decision making) are different in various jurisdictions. Also, the application of these rules are not quantifiable because jurisprudence involves many schools of legal reasoning (11). These schools include positivism, realism, rationalism, morality, and sociology. Although all the schools are involved with the application of law to the expectation of the parties, these schools base their decisions on different premises. Some of these schools favor policy factors (nature of injury, who suffered injury, available alternatives, and fairness) more than legal rules presented in judicial opinions. To predict when and how policy factors will be used becomes a difficult, if not an impossible task.

SIMPLIFYING ASSUMPTIONS

As engineers, we are able to overcome our imperfect models that are based on simplifying assumptions because engineering judgment and factors of safety are built into our decisions. However, in legal decisions, the authors can not forget that they are dealing with people: people who originally contracted, people (lawyers) who will actually reestablish the facts and present the legal issues, people (judge and jury) who are the fact finders and make legal decisions, and people (plaintiff and defendant) who will be compensated or suffer by the outcome. How can the "people" variable be quantified in the computer model to reflect the real problem? The simplifying assumption of a single entitlement issue removes the problem from reality. Considering the Federal Rules [8e(2)] of Civil Procedure (10), the attorney can present several claims or entitlement issues in his complaint. The complexity of several entitlement issues and the approach the fact finder (judge and jury) will use from

[a]December, 1984, by James E. Diekmann and Timothy N. Kruppenbacher (Paper 19320).

[5]Consultant, 3520 Cleveland Heights Blvd., Suite 111, Lakeland, FL 33803.

the various schools of legal reasoning makes the modeling of these entitlement issues a monumental task. Moreover, extrinsic evidence developed during contract formulation may or may not be admissable as evidence because of the parol evidence rule (9). How will extrinsic evidence be modeled in your computer modeling approach to claim's resolution?

Limitations

As the authors have discussed, an expert system requires a knowledge base and a mechanism which directs the manipulation of the knowledge base according to a set of rules for applying the knowledge. The writer already has discussed the limitations with assuming a closed set of legal rules to manipulate the knowledge base. However, a more fundamental problem with the author's computer approach to claim resolution, is the need for a user with legal, factual and technical knowledge to operate the user involved lines of control of DSCAS. This implies that the authors need a techni-legal consultant who is both an attorney and engineer to operate the DSCAS. This consultant is the one person the authors wanted to avoid because this consultant is either not available or is too expensive. If this consultant were available in sufficient quantities, would not the expense of using such a consultant be lower? Supply-demand theory of economics indicates that this fact would be the case. If a techni-legal consultant was available at reasonable rates, there really would be no need for the computer model that needs his expertise to function.

Alternatives

There is no question that in our highly technical society, a society which has produced the type of computer technology discussed by the authors, there is a need for computer modeling to help us solve many complex scientific problems. However, the use of computer modeling to resolve complex claim's disputes based on legal, factual, and technical knowledge does not appear to be the primary alternative. Instead, it is time that engineers stop shunning the use of lawyers and try to understand the perspective they bring to the problem. The problems associated with contract disputes resolution are complex. The solution of these problems require a person who has been trained to think logically and systematically and who has a knowledge of both the law and engineering. Neither the lawyer nor engineer can do this alone. Many of the 21st century engineers will have to be both a lawyer and engineer so that they can provide guidance to the parties involved (preferable during contract formation). This broadness of perspective will enable the expectations of both parties to be realized.

Litigation is failure. It is a failure of human interaction because certain conditions were not considered. The parties involved (including the attorneys and consultants) had a perspective that they brought to the situation that only reflected one discipline (e.g., engineering or law). It was the narrowness of perspective that caused certain conditions to be overlooked. It is these overlooked conditions that are the obstacles to the

realization of the expectations of the parties. It is hoped that the techni-legal consultant will begin to be educated in our schools and receive the experience in our industries to bring the perspective of law and engineering and long-term solutions to the problems confronting our highly technical society in the 21st century. It can not be done overnight, but we must get started!

APPENDIX.—REFERENCES

9. Farnsworth, E. A., *Contracts*, Little, Brown & Co., Boston, MA, 1982, pp. 447, 451.
10. Landers, J. M., and Martin, J. A., *Federal Rules of Civil Procedure with Selected Statutes and Cases—1982*, Little, Brown & Co., Boston, MA, 1982, p. 22.
11. Nagan, W. P., "Jurisprudence—Introduction to Fall Semester 1983," Univ. of Florida, College of Law, 1983, pp. 222–461.

Closure by J. E. Diekmann[6] and T. A. Kruppenbacher[7]

The writers would like to thank Salomone for his interest in our paper and his well-considered comments. However, we cannot accept all of his criticisms for we believe some are based on fundamental misconceptions of our goals in this research.

The basic and underlying purpose for conducting this research is to develop and demonstrate a tool for contract management in the construction industry. Litigation and claims in construction are consuming an ever larger share of the energy and resources of construction industry participants. Much of the litigation is caused by miscommunication, lack of understanding, or ignorance of good contract administration practice. Much of this litigation could be avoided if the disputing parties had a better understanding of the given fact situation and how those facts are interpreted in light of the existing contract language and contract law. If it is possible to demonstrate that contract administration knowledge can be codified in the form of an expert system, then it is possible to use this system as a tool to reduce the level of misunderstanding and miscommunication in the industry. It is not the intent of this work to imply that expert legal analysis systems can or should supplant legal counsel as a necessary source of legal advice. Rather, we acknowledge that legal advice is not always sought because it is either inconvenient or expensive to do so. We believe it a worthwhile goal to make available to construction practitioners a system which will cause them to call their attorney when necessary. The promise of expert legal analysis systems is that they can reduce the overwhelming cost of litigation by assuring that only serious well founded claim disputes reach serious proportions. Second, expert legal analysis systems will provide an inexpensive method to transfer knowledge and expertise to young construction practitioners. Therefore, it is our primary aim to use this new field of Expert Systems

[6]Assoc. Prof., Construction Engrg. and Management Program, Univ. of Colorado, Boulder, CO.

[7]Grad. Student, Univ. of Colorado, Boulder, CO.