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Title: Review of John G. Kemeny's Man and the Computer

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to study curriculum, chaired by Paul Car-
rinton; and "The Limits of Legal Realism: An
Historical Perspective" by Calvin Woodard. The second generation append-
dices—to the Carrington report—are the
first report, "Training for the Public Pro-
fection of the Law," made in 1921 by Alfred Z. Reed.
review of that report by Preble Stolz, and "The Materials of Law
At one time, when a new law teacher
asked an old law teacher what he should
read to learn what had happened and was
likely to happen in legal education, the
reply was, "Read any 20 consecutive years
of the Journal of Legal Education. The
same ideas are expressed, lauded, criticized,
and forgotten every 20 years." Now one
does not have to read so many volumes. The
time of legal education are in this
book.
The progression of topics illustrates the aspirations and frustrations of lawyers
who want to improve education for their pro-
fession.
Society needs and is requesting more law
work from lawyer's services. Graduates of law
schools do many things and do them well.
Law schools, by and large, continue to train
for practice in large law firms in major
cities. That is the approach at the Harvard
Law School—or what most lawyers think is
the approach there. Since about 1900, the
lasting movement in legal education has
been convergence to the "Harvard pattern."
The uniform mold is four years of col-
lege and three of law school. Some students
are prepared to study law after three years of
college. Law schools, or some law schools,
should accept them. Some students could
learn in two years of law school all that is
learned in three. For them, and for some
who want to learn a defined segment, some
law schools could offer instruction leading
to a degree after two years. There could be
a third year for more intensive specialized
learning. There should be more diversity
among law schools; there is a variety of
lawyers and lawyers' work.
Some work now done by lawyers could
be done by persons with less academic training. Some legal needs could be met by sub-
professionals working under the direction
of lawyers and paraprofessionals working with
lawyers or independently. Lawyers trained
and certified as specialists who could adver-
tise ethically would work more efficiently and
for more clients. Law schools should have a
hand, but not the only hand, in training
new persons to work with and beside general
and specialized lawyers.
Law schools now have the best, brightest,
and most idealistic students and the most
diverse student bodies. Students want and
are entitled to more than law schools are
giving them. They deserve much of the
credit for the changes made in recent years.
The students could learn more and do more
if law schools would break the mold.
There is now sufficient effort at clinical
education to merit the serious consideration
the authors give the subject. Chapter 5 is a
good introduction to the Carrington report,
an exciting and provocative inquiry into the
nature of legal education.
This brief review of topics began with a
suggestion of the frustration of law teachers,
which becomes evident in the Carrington
report, "Financing Legal Education." Legal edu-
cation has always been run on the cheap.
Most university presidents see it that way.
Lawyers—the graduates—do not protect
effectively and certainly do not contribute
generously. The U.S. Congress, with more
graduates of law schools than of any other
school, has not seen the need for public
funds for legal education.
In a day when we have the best students
to improve legal education, the best argu-
ments to support the contribution to society
of new careers shaped by different schemes
of legal education, and the best opportuni-
ties to convince administrators and faculty
of the value of teaching not only throughout
the university but also more effectively
within the law school—at this
time, the universities are going broke, and
the public ill is not available for educa-
tion—and so the frustration!
The Parker-Ehrlich study is so well done
and convincing that I am less pessimistic.
This volume has to be more than just
plain the superficial treatment of some rather
complex subjects.
Kemeny's unifying theme is the arresting
notion that interaction between man and
computer is a new form of symbiosis which
could lead to more advanced life styles. As
background, the author presents a personal
history of his experience with digital com-
puters over the past quarter century (when
computers have come into their own). The
symbiosis he outlines is dependent upon
"time-sharing systems."
The reader is instructed about the nature
of these systems largely through description
of the Dartmouth computer facility. This is
one of the book's strong points. Some of the
statistics Kemeny cites indicate the magni-
tude of that operation. Each year more than
14,000 different people use the facility.
Ninety-eight percent of all programs are writ-
ten in BASIC, although a variety of other
languages are available. "On a particularly
busy day the system had . . . a peak of 111
users . . . (and) . . . a total of 19,503 jobs for
the day." Through this time-sharing system,
the computer at Dartmouth has become not
only a powerful aid in research, but also an
important tool for the teaching of social
sciences and even in the humanities.
Thus, the first half of the book is largely
a descriptive presentation of the new sym-
biotic relationship, concluding with a disku-
sion of some of the fallacies remaining un-
identifying some popular fears and misconceptions
about computers.

The remainder of the book examines the
world as it might look several decades from
now if time-sharing systems were used as
fully as Kemeny would like. Potential appli-
cations include, for example, incorporating
computers in the educational process in ways
beyond the rather rigid approach of many
computers aided instruction projects to date.
The author briefly discusses libraries of the
future, future management information sys-
tems with particular reference to college ad-
ministration, and the possibility of having a
computer terminal (or two) in every home,
concluding with a section on the ways in
which computers can be used to solve such modern problems as urban transportation. Many of these futuristic notions have been discussed since time-sharing first was introduced in the early sixties; in some areas of application, e.g., libraries of the future, extensive hardware and software developments have been written about in much greater depth elsewhere. However, Kemeny is extremely articulate and has a talent for presenting highly technical subjects, such as man-machine interaction, clearly in layman’s terms (unlike most practitioners in those fields whose written products read like the advanced stages of acute schizophrenia).

Kemeny’s description and history of computers include some statements that might give a computer programmer pause. For example, “A random undetectable error is almost unheard of.” Of course, this statement is literally true since (1) few are likely to “hear of” an error that went “undetected,” and (2) few errors are “random,” but many examples of such occurrences immediately spring to the programmer’s mind. Similarly, Kemeny’s assertion that IBM’s (second generation) business computer had a rather short life, because the general-purpose scientific computer turned out to be more efficient for business applications than the special-purpose machines is a questionable interpretation of history. Many who used both machines, including this reviewer, would have chosen the special-purpose machine for business applications. Both computers were replaced by IBM’s third generation computer (the 360), a compromise system incorporating some aspects of both scientific and business machines. This compromise, dictated in great part by marketing considerations, led to a variety of hardware, software, and personnel problems during the early days of the system. For example, scientific programmers working on the larger 360 models found their flexibility constrained by parameters that resulted from the necessity to maintain consistency with smaller models developed along business lines.

As a result of messianic zeal, Kemeny failed to deliver on the promise made in the book’s preface for “a critical evaluation of the present state of the art and the various applications of computers.” The unfortunate result is that the book’s value to college administrators is limited. The author would have performed a needed service if he had described in more detail alternative forms of computer systems and their value to different sectors of the university today, rather than focusing on potential uses of time-sharing. Professional educators and other decision makers will not find enough in this volume relevant to their daily problems. Students just beginning to learn about computers will be frustrated by the lack of technical detail and depth. Clearly, the appropriate audience is the “intelligent layman” who would like to read an entertaining, highly literate introduction to modern forms of computing, combined with some intriguing proposals for making these new techniques useful in solving social problems in the future.

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