A book review.

KRAFT, P., Programmers and Managers: The Routinization of Computer Programming
in the United States. Berlin etc., Springer-Verlag 1977, 118 pg., price
DM 15.70 . (Heidelberg Science Library)

    The author argues that, in recent years, managers, by applying
"scientific innovations [in computing science] to the problems of profit-
making and employee control" (p.9) have succeeded in "de-skilling" the pro-
gramming profession. "The key to profitmaking is to reduce the cost of
labor.[...] In practive it means making more of a product with fewer skilled,
and therefore fewer expensive, workers." (p.51). "The tranformation of pro-
gramming is not the result of technological imperatives inherent in the logic
of programming or computing (sic!). Programming has changed because managers,
concerned about profits, have set about systematically and carefully to
change it. It has happened before. Similar attempts to routinize work have
been made by managers of the most diverse workplaces. The common denominator
has been the desire to substitute less skilled and therefore less expensive
workers for more skilled and more expensive workers." (p.97). "The centerpiece
of management efforts to de-skil programmers is structured programming." (p.99).

    In About 50.000 words the author sketches a development that would be
worth taking notice of if it were true. But is it? The author has stated his
thesis almost without any supporting evidence: the book does not contain the
documentation from which a reader could draw his own conclusion. (The booklet
contains about as much evidence for the thesis that the author is a crypto-
Marxist, or an agitator, secretly paid to disturb American industrial relations.)
His accusation "For example, software managers routinely get rid of older,
more experienced programmers and replace them with younger, less experienced
programmers. The reasons are straightforward: it costs less to employ a young
programmer than an older one[...]." (p.54) is not substantiated. This is the
more serious, because of all software managers I have met --the American ones
included-- I cannot believe that even a single one would act that way: in
view of the generally admitted scarcity of the competence required it strikes
me as a very foolish thing to do.

    It is, of course, possible that the average software manager never
crossed my path. A possibly clearer indication that the author --he is a
sociologist-- does not know too well what he is writing about is given on p.28:
"management consultants did not really anticipate the elimination of all
programmers, only the replacement of most application programmers and coders
by an alliance of the most advanced computer scientists on the one hand and
nonprogrammers, such as managers or clerks, on the other. Although the ma-
nagerial vision has yet to be realized, hardware producers have made impressive
advances to bring the day closer." (p.28). But the then quoted paragraph from
Robert F.Rosin ("Supervisory and Monitor Systems", Computing Surveys, Vol.1,
No.1, March 1969, pp 37-54) --or, for that matter, any other paragraph from
that article-- utterly fails to support the author's preceding statement.

    It is obvious that with changing (hardware and software) technology the
programming task has changed, and the programming profession with it. A lot
of the clerical tedium in the programming practice of old, being essentially
of a routine nature, could be mechanized: the non-routine aspects of the pro-
gramming task remained! Add to this that society has become more ambitious
in its choice of computer applications; as a result the programming profession

as a whole requires now a higher level of intellectual sophistication than it used to do. For the older programmer that, without much formal training, entered the profession when it was still a craft, this development may indeed create employment problems, but they are of a nature opposite to the ones de-scribed by the author. The division of labour as he sketches it could also be viewed as an effort to compensate , as an effort at creating an environment in which also the less gifted can contribute.

The book contains the usual sections on the influence of wars and the military on industry --"industrial production, now happily spurred by patriotism as well as the profit motive" (p.32)-- , on the influence of major employers on the educational institutes --"A pattern of intimate co-operation was firmly established between technical institutions and the science-based industries" (p.34)-- , and on the role of education as a tool for the maintenance of social barriers --"Programming itself provides an interesting illustration of how routinization reinforces exisiting class divisions" etc. (p.106)-- . Furthermore something like "creativity" is confused with the erratic freedom of the undisciplined mind.

Warmly recommended to the lovers of that brand of simplicism!

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