# LETTERS TO THE EDITOR

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## COMPUTER LANGUAGES FOR GENERALISTS

To the Editor:

The article by Mullins[1] in the September 1984 issue of *The Journal* posed a trivial question and inescapably reached a trivial answer. Unfortunately some of your readers may be misled by his conclusion, much as they might by the answer to "Have you stopped beating your spouse yet?" Mullins infers that disenchantment with BASIC is endemic to university computer science departments, but indeed such feeling is very widespread for a number of reasons. First and foremost, readers must be aware that BASIC is not a computer language but is a rubric for a collection of computer languages that bear considerable similarity to one another. No standard exists for the syntax or vocabularly of BASIC, thus a program written in one version will not run in a computer that implements a different version; it must be rewritten. BASIC programs are not portable from one system to another!

BASIC is a verbose language. Mullins shows that Pascal is more verbose than BASIC, but does not mention other languages that are less verbose and more powerful than either. One such is MUMPS (an acronym for Massachusetts General Hospital Utility MultiProgramming System). MUMPS was developed, as its full name implies, for the data-handling needs of the medical user and is compact, powerful and—perhaps most important—subject to standards of the American National Standards Institute.[2] A program written in MUMPS for a 40-user minicomputer system runs on a home microcomputer and vice-versa. Moreover, in direct comparison, MUMPS programs run faster and take up less disc storage space than those written in BASIC (or several other languages).[3] This last is especially significant for the user of a personal microcomputer, whose disc space is necessarily limited.

Best of all, MUMPS is now available at nominal cost in a version for most personal microcomputers that use either CP/M or MS-DOS operating systems.* At the Department of Family Practice of UC, Davis, residents routinely take two weeks to learn enough MUMPS to be able to write useful programs, several of which we have started to incorporate into our clinical practice. (I suppose that Mullins would consider this compares favorably with Burton's three months.) In short, it would appear that the best answer to the question posed in the title of Mullins' article is, "neither."

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*The preceding letter was referred to Mr. Mullins, who responds as follows:*

Dr. Mendelson raises several points that are of interest in discussing any computer languages, but comes to a rather strange conclusion.

The first of these points is whether BASIC is a "language." Languages are classically defined (in the mathematical sense) as sets of strings. Consequently any well-defined grammar defines a language. There are, of course, many dialects of BASIC, just as there are many dialects of FORTRAN, Pascal, FORTH, and for that matter, English. There are two main purposes to any computer language: to communicate a method of performing a task, and to im-

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plement the performance of that task. Languages that are suitable for the first of these tasks are not necessarily the most efficient for the second (more later).

The second point raised by Mendelson is that of portability. This concept has changed a little over the last few years, since the advent of the microcomputer. Previously computing was done on relatively few machines, and these machines were supplied with compilers, for example, for FORTRAN. Programs written in Seattle needed to be capable of implementation in Auckland, New Zealand, and also in Turku, Finland. Hence the need for portability. Now, however, there are millions of sites that support the BASIC dialect called Applesoft alone! There are millions more that support Microsoft BASIC. My point is that portability is now applied to portability across space, but not necessarily across machines.

Mendelson's third point sounds more like an advertisement for MUMPS, couched as a plea for compactness, power, and efficiency. The most compact, most powerful, and most efficient programming language for any computer is specific to that computer, and is of course, machine code. Development time for machine-coded programs, however, can be very large. In this situation the ultimate market justifies the enormous investment in development. VISICALC was written in machine code—imagine how it might perform were it written in MUMPS!

Mendelson's fourth point seems to be the price of MUMPS—I am not sure what 'nominal cost' is, nor whether MUMPS is available for the million and one-half or so Apple computers, as well as the CP/M family of computers and the IBM Personal range of computers, but all of these are supplied with BASIC more or less as part of the purchase.

Perhaps I did not make the point very clearly in my article: I shall try again.

1. Microcomputers are very widespread: almost all professionals will have one by the end of the decade if not sooner.

2. These machines usually come equipped with BASIC. However, the next most popular language for these machines is Pascal. There are many other languages available, all having their own advantages and disadvantages. I chose only the two most widespread to compare.

3. My conclusion was not so much a trivial answer as a nonanswer: it depends. For small tasks, it is difficult to find a language that will produce an answer as quickly as BASIC. For medium-to-large tasks, it is difficult to find a language as badly suited as BASIC. Pascal, on the other hand, is very well suited, and in spite of Mendelson's pleas on behalf of MUMPS, p-system Pascal is quite portable across machines as well.

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## NEONATAL CIRCUMCISION

To the Editor:

In 1975, almost ten years ago, the Committee on Fetus and Newborn of the American Academy of Pediatrics issued a report which concluded that there were no valid medical indications for circumcision in the newborn.[1] It is estimated that the procedure is still performed on more than 90 percent

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of newborn male infants in this country,[2] making it the most frequently performed surgical procedure on male patients in the United States. A wide variety of cultural, medical, psychological, and religious reasons are commonly offered to justify circumcision. Cultural and religious reasons aside, the widespread support for this practice among physicians is surprising in light of the contrary evidence published in the medical literature.

Reports of complications in the literature arising from neonatal circumcision range from minor bleeding to total ablation of the penis, necessitating reconstruction or sex-reassignment of the infant.[3] Investigations that have measured physiologic parameters during circumcision including heart rate, transcutaneous oxygen pressure levels, and time spent crying indicate discomfort in the infant.[4]

There is evidence that physicians themselves are influential protagonists for circumcision,[5] though a recent article in *The Journal of Family Practice* shows that parents are subject to many other influences.[6] If physicians are committed to performing the procedure—and family physicians should reconsider doing a painful, unnecessary, potentially complicated procedure—it is appropriate that such be done with as little discomfort to the infant as possible. In 1978 Kirya and Werthmann[7] described a technique of penile dorsal block to provide anesthesia for neonatal circumcision. This procedure involves the subcutaneous injection of 0.2 to 0.4 cc of one percent lidocaine at the 10 and 2 o'clock positions on the dorsal aspect of the penis approximately 0.5-cm distal to the penile root. This procedure has been used and reported upon repeatedly since the initial article and has been consistently shown to relieve the pain in the procedure and cause less physiological stress.

Debate will continue to swirl around the question of performing infant circumcisions: established traditions are notoriously hardy. It would seem appropriate that physicians in training be taught the penile nerve block as part of the circumcision procedure as long as family medicine training programs continue to allow or instruct students or residents to circumcise newborns.

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