for prescribing a diaphragm; in public clinics, the total cost to the public is lower, for the ring itself is less expensive than a diaphragm, and there is no cost for spermicidal agents. Obviously, there is some additional cost when a woman decides to have the ring removed so that she may attempt to conceive. Only if she changes her mind in this way as frequently as every third month, however, can the costs even approach the costs of using and then abandoning drugs that prevent ovulation.

Finally, I object to the gratuitous comments Novak makes about how the ring may be presumed to function. As yet no evidence has been accumulated to support his contention that the ring prevents or disturbs nidation but does not prevent fertilization.

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Electroencephalographic Data: Baseline Crossings

In a recent report (*1*) MacIntyre *et al.* describe a method of analyzing electroencephalographic data in terms of baseline crossings, a technique also used in other laboratories. Two important points need to be clarified: (i) the full spectrum of EEG activity is *not* "recorded with equal emphasis given to all durations independent of amplitude"; and (ii) plots of pulses per minute as a function of pulse width, as in their Fig. 2, should be interpreted with caution, taking into account characteristics of the system of analysis.

One characteristic of the system is shown by plotting the *maximum* number of pulses per minute as a function of pulse width. The maximum number of pulses per minute is equal to 30,000 msec divided by the pulse width in msec, assuming that the EEG recording is above the "baseline" 50 percent of the time (depends on discriminator level). Since more pulses per minute are possible at short pulse widths than at long, the plot rises sharply (reciprocal function) at short pulse widths.

When empirical data of mixed frequencies are analyzed, the higher frequencies are favored since they are more likely to cross the baseline, provided they have sufficient amplitude. Thus, many potentially long pulse widths are sacrificed whenever a shorter pulse width occurs first. This results from a fundamental characteristic of the analysis system, namely, that the pulse widths are determined sequentially and are therefore mutually exclusive. This system characteristic may be the source of their report that waves of less than 10 msec "actually comprise 85 percent of the total distribution." The quantity of data having 4- to 20-msec pulse widths would be about 40 percent when computed in terms of percent of maximum possible pulses per minute or in terms of time.

Even more important, expressing the data as percent of maximum possible pulses emphasizes that the sum of these measures over all pulse widths equals 100 percent, provided that all the data fall in one or another of the pulse-width classes. This results from the system characteristic that, given exhaustive classes, the sum of the products of pulse widths and number of pulses equals the total analysis time. Since the area under the curves in this sense is constant, another interpretation of the curves in Fig. 2 is possible. Whenever one part of the curve rises (increase of pulses of a particular width), another part or parts of the curve must fall (decrease of pulses of other widths). The decrease between the "eyes open" and "eyes closed" distributions in the 4- to 20-msec wave widths may result directly from the increase of 36- to 68-msec wave widths, and in this sense may be an artifact of the measuring procedure. Additional support for such an explanation is that the short wave widths were of small amplitude and thus generally could not cross the "baseline" when large-amplitude waves of alpha frequency were in progress during the "eyes closed" condition. Thus, the baseline-crossings technique is not independent of amplitude (with respect to different pulse durations) and the scores in the various wave-width classes are not independent of each other.

The baseline- crossings method may be useful in analyzing EEG data. If it is used, I suggest plotting the results as percent of maximum possible pulses for each wave width, as an aid to avoiding interpretation pitfalls. The need for data reduction in EEG has been met in a variety of ways. We have found another on-line approach (*2*) to be useful in reliably detecting small EEG effects (*3*).

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The assumption of equal emphasis given to all durations independent of amplitude is in reference to analysis in the time domain. Thus, to consider a pulse as made up of a short-duration, small-amplitude width superimposed on a large pulse of long duration has no meaning in the time-domain analysis. The only parameter that is meaningful in this analysis is the time between the successive crossings of the baseline. It is this value which is recorded with equal emphasis regardless of the pulse height between these crossings.

In suggesting plotting the results as percent of maximum possible pulses, Chapman has brought up one of several alternatives that have to do with the choice of presentation of data rather than with the recording. While the reported data were plotted as a histogram of the number of pulses versus pulse width, these data have also been expressed in terms of the total time of analysis occupied by pulses of specific duration (number of pulses multiplied by the average duration) whether or not a change in specific duration is dependent on the total distribution.

Chapman's comment correctly points out that any data-reduction system must be interpreted with close regard to what data are emphasized and what data are eliminated.

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