Reliance on Cybernetics

To the Editor:—I have some hesitancy in submitting this letter because I have been out of active teaching and practice for more than five years. However, being an old firehorse, I still respond when the bell rings and the bell rang when I read the article by Cooper et al.1 I support the authors' reason for developing a new anesthesia machine. Certainly, progress demands that we not go on accepting the same approach to solution of problems. Furthermore, the apparatus they have designed will provide not only more information but information of a more definitive, reliable and precise nature in a more orderly and more meaningful manner. What rang the bell is my interpretation that such a machine, although it will not necessarily result in abandonment of management of anesthesia by the anesthesiologist, may put an unwarranted emphasis on management of anesthesia by machine. It is, of course, critical that the anesthesiologist have the most information one can obtain about the agents being administered. It is, similarly, important that he or she get as much information as possible about the responses of the patient.

However, I have long believed and taught that clinical judgment derived from constant, repetitive and close contact with patients is a necessary part of the practice of anesthesia. What worries me is that having an apparatus that will deliver precise, known, and constant concentrations of agent, oxygen, nitrous oxide or whatever, supports and advances the notion that a machine can determine differences among patients and changing conditions in the same patient. All patients are not the same even though they weigh the same, are of the same age, are of the same sex, are from the same ethnological background, etc. All patients are not the same in the middle of, or at the end of, an anesthetic and operative procedure as they were at the beginning. I am aware that the developers of the machine have built into it and propose to build in devices that will measure ECG, expired oxygen concentration, ventilation variables, blood pressure, pulse rate, and other patient or anesthetic data. This is all well and good except that devices tend to make the anesthesiologist believe that he or she can rely primarily or entirely on these measurements. As a result, an alarming number of current anesthesiologists do not develop or use those valuable clinical senses that make it possible accurately to assess pulse quality, cardiac tones, changes in heart sounds, skin color and temperature, breath sounds, muscle tone, etc. Such assessments are critical to the minute-to-minute management of the patient under anesthesia and undergoing a surgical procedure. These assessments are as vital to the ultimate judgment of what is happening to the patient as are the measurements obtained from the apparatus. I make a plea to the developers of the prototype of a well-merited advance in anesthetic apparatus that they do their very best to avoid establishing the notion that the machine is the ultimate monitor. For example, the machine will not tell the anesthesiologist that an early deterioration of the patient's cardiac, vascular or respiratory systems makes it mandatory that the precise and constant delivery of an agent be changed. The monitor shall always be the physician. We are all still practitioners of medicine and in spite of the many beneficial mechanical and laboratory aids, it is still mandatory that we develop, preserve and use our special senses through close attention to and contact with the patient.

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Reference
(Accepted for publication January 22, 1979.)