Dear Madam and Sir,

Eric Shea-Brown’s exciting article on “Exploring Connectivity in the Brain ...” makes me wonder if a slightly different target should be pursued. He asks “Just what is the right way to describe ... neural activity?” I propose one right way.

It is hard to believe that the nervous system can process information without a fundamental unit corresponding to the word in a computer. Of course, different systems in the brain may use different fundamental units; of course, the word is not indivisible; it can be divided into fields used separately in microcode. Nonetheless, it seems to me that the wonderful methods Shea-Brown describes might be focused on the questions: “What is the word? How do impulses code the word?”

Clues might be found by taking an existing logic system, in which impulses are not all the same size, because of noise and speeds approaching the physical limits of the device, and focusing Shea-Brown’s methods on that system. There we know the answer, so methods can be refined to be sure they can detect what we know. It is hard to believe that methods that fail in known digital systems will work in the brain, so this approach may help choose what will work best for biology.

Ever yours

Bob Eisenberg