

To count.

Some people speak fluently (which does not necessarily imply that they speak correctly). Nobody counts fluently (although he may do so correctly). The reason is that numbers are clear and distinct. There are intervals between the numbers. The alphanumerical code (the signs of which are inscribed on the keyboard of typewriters) is a collage of fluency with stuttering. The letters (which are meant to render spoken sounds visual) merge to form words, the words merge to form sentences, and the sentences merge to form a discourse; but the numbers cluster in mosaic patterns called "algorithms". Still: typewriters handle letters as if they were numbers. A separate key moves each letter. Typewriters do not write fluently, but they "process" the letters. In fact: they are not writers but counters. This paper will consider why this is so.

There is an easy explanation: all mechanisms stutter. Even if they seem to be gliding. Observe a badly working motor car or film projector. But the easy explanation begs the question which is: "why do all mechanisms, including typewriters, stutter?". Here is the answer: because everything stutters. Of course: you have to look very closely to see that this is so. You have to listen very carefully to hear that he who speaks fluently stutters. Such a close look at things has become possible only after the invention of apparatus. Thus it was only recently that Planck was able to show that everything stutters (is "quantic"), although as early as Democritus some people suspected that this is so. Now of course this implies that the clear and distinct (stuttering) numbers are adequate to the world, and that the fluent letters cannot grasp the world. That the world is indescribable but that it can be counted. This is why the numbers should leave the alphanumerical code, become independent of it. Which in fact they are doing: they are establishing new codes (like the digital one), and they feed computers. As for the letters (if they want to survive), they have to simulate numbers. And this is the reason why typewriters stutter.

However a few remarks are in order. For instance: it may be held that it was found out that everything stutters only after people began to count it. In order to count, you have to divide the thing in little bits ("calculi"), and stick a number on each bit. Thus the fact that the world consists of particles may be a consequence of our counting. It may not be a discovery at all, but an invention. What we discover within the world we have fed ourselves into it. The world may be counted perhaps because we have ourselves handled it that way. Thus it is not true that the number code is adequate for the world, but the opposite is true: we have made the world adequate to numbers. This is uncomfortable.

Suppose that the world is composed of particles because we began to count it. You have to suppose in that case that it was structured differently before that. Ever since the Greek philosophers people used letters to describe the world. Therefore it must have been structured then according to the rules of disciplined discourse which are the rules of logic. And not, as is the case now, according to the rules of disciplined counting which are the rules of mathe-

matics. In fact: as late as Hegel it could be held that everything in the world is logical (which to us is an insane opinion). The explanation for Hegel's insanity is that he was a writer, while nowadays we use computers and therefore believe that everything in the world is an absurd accident the probability of which may be calculated.

The matter is even more uncomfortable if you consider Russel and Whitehead. They have shown in "Principia Mathematica" that the rules of logic cannot be fully reduced to the rules of mathematics. They have attempted to handle logical discourse according to mathematical rules ("proposition calculus"), and have found a fundamental discrepancy between those two structures. Thus no satisfactory bridge may be built between Hegel's world and the Planckian world. Ever since we began to count methodically (ever since Descartes proposed analytical geometry) the structure of the world has changed, and it cannot be reduced to its previous structure. And it is this uncomfortable fact which we must try to face at present.

Of course: you may try to argue that it is ourselves who decide the structure of the world. If we like to write, the world will follow the structure of logical discourse, and if we prefer to count, it will follow the structure of mathematics and will become a particle swarm. But unfortunately such an argument will not stand examination. It is only after we began to count that we have machines (for instance typewriters), and we cannot live without machines even if wanted to. Thus we cannot but count the world. Everything looks as if the world needed appropriate handling before it may be counted, but that it is the world itself which demands such a handling.

At this point we run the danger of falling into the bottomless pit of religious exaltation. To avoid the risk of Pythagorean sacralisation of numbers it is best to compare the gesture of counting with the gesture of writing. If you write by hand you draw a complex and partially interrupted line from left to right (that is: if you live in the Western world). Yours is a linear gesture. If you count you pick pebbles and then you assemble them. Yours is a point-like gesture. First you pick (you calculate), and then you assemble (you compute), you analyse and then you synthetize. This is the radical difference between writing and counting: to count is to aim at a synthesis, while writing is only critical (analytic).

People who are committed to writing try to deny this. They identify counting with calculating and say that it is a cold unfeeling gesture. This is malevolent misunderstanding. He who calculates does so in order to compute something new, something which has not previously existed. This creative heat in counting is inaccessible for those who have not learned how to handle numbers. They cannot perceive the beauty of philosophical depth of some equations (like Einstein's). But now computers can transcode the numbers into shapes, sounds and colors, and thus the depth and beauty of counting may be perceived by our senses. The creative power of counting may be seen with one's eyes on computer screens, heard with one's ears in synthetized music, and soon may probably be

grasped with one's hands in holograms. This is what is so fascinating about counting: that it is capable of projecting worlds which can now be perceived by our sensés.

Those who vilify counting insist that those projected worlds are nothing but simulations of the true world, that they are mere fictions. They are mistaken. Those projected worlds are computations of calculations, but so is the true world. Our nervous system receives pointlike stimuli which our brain computes into perceptions of the world. Thus either the projected worlds are just as true as is the true one, or the true world is just as fictitious as are the projected worlds. The fascinating thing about counting is that it enables us to project alternative worlds. That we need no longer be subjects of a single world, but may become projects of multiple worlds.

"Ah love, could you and I with fate conspire to grasp this sorry scheme of things entire. Would we not shatter it to bits and then remould it nearer to the heart's desire?" (Omar Khayyam). Those people see that we are about to shatter to bits that sorry scheme of things entire. But they are unable to see that we may compute it nearer to the heart's desire. It is time for those people to learn how to count.