

On the *Other* Hand ...

Medical Report: Infectious Symbolophobia

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Computers are the only machines which both manipulate symbols and are manipulated by them; they are “physical symbol systems.” As we know, AI uses this insight to implement systems capable of thought. However, some people find this idea of a symbolic machine very unsettling. This tension can be a clinical precursor of a disorder called *symbolophobia*.

Although we thought we had independently discovered and named this disorder, we subsequently found that it was already known to medical science by the same name. Doctor and Kahn (1989) have this to say when discussing symbolophobia: “Individuals may fear the symbols themselves with or without understanding their unconscious representation.”

Those suffering from symbolophobia take the word symbol to be symbolic of all that is wrong with AI. Symbols are blamed for rigidity, ungroundedness, disembodiment, formality, seriality, logicity, etc. Victims of symbolophobia often find reassurance by imagining computers that are subsymbolic, analog, biological, socially-situated, or quantum.

Most forms of symbolophobia seem to be contagious. The etiology and epidemiology of this worrisome affliction are not fully understood, but some early treatment protocols seem effective and early inoculation is advised.

Symptoms

The early symptoms are often masked and difficult to diagnose. They include a nagging doubt that computers could show creativity, free will, etc., or an incoherent sense that AI fails to address a central “mystery” of some kind. A characteristic sign of middle-stage symbolophobia is a tendency to cite authors who died before computers were invented. The transition between middle and late stages is often marked by references to Heidegger (in the *socio-neuromania* strain), or by an obsessive concern with Chinese interior design (in the variant sometimes referred to as *formalist vision*). Advanced stages of either the *Gödelian itch* strain or *quan-*

tum mysterianism strain are usually easy to recognize. It has been reported that in very advanced stages, symbolophobia shares many symptoms with rabies. This end-stage is often marked by an irrational distrust of anything technical or computational.

Strains

Many different strains have been identified, each with its characteristic symptoms. Here we will briefly sketch only a few of the most common.

Formalist vision arises from imagining oneself to be trapped in a box into which people shove little slips of paper with Chinese scribbling on them. There is perpetually nothing else to do, so the victim matches these symbols with similar symbols found in a large book, follows the rules contained therein, and then passes some other symbols out under the door. The victim often feels as if he were a computer. Our sufferer, under the spell of the formalist vision, claims that he understands nothing—so neither can computers—because he is like a computer and *he* understands nothing.

The *Gödelian itch* is a belief that Gödel's incompleteness theorem doesn't apply to humans, who can therefore correctly decide whether or not they will terminate on every input. In one sense this is trivial, since all humans will indeed eventually terminate no matter what their input, but the *Gödelian itch* is characterized by the delusion that humans can compute noncomputable functions. This strain of symbolophobia, thought to have been eradicated over a decade ago, has recently reappeared in a new and particularly virulent form. Epidemiological studies suggest that a single human vector may be the source of this recent outbreak.

Double mysterianism is the belief that since intelligence (consciousness, etc.) is mysterious, we should find another mystery, perhaps called *antimystery*, which will cancel it out in an explosion of pure illumination. The commonest variety at present is quantum mysterianism, where the second mystery is the problem of making sense of quantum theory. Patients with quantum mysteri-

anism often believe that the secret of mental life can be found in very, very small things like micro-tubules or the surfaces of protein molecules.

Situated socio-neuromania believes that symbols must be disembodied and fears the consequences. The patients are often unable to express themselves clearly, but terms such as “situated” and “grounded” often occur. The diagnostician needs to exercise care to distinguish this from a quite healthy concern with social contexts, details of implementation architecture or insects. The characteristic feature of *socio-neuromania* is the insistence that a cognitive theory must eliminate any talk of symbols altogether.

Other forms may also be present in the general population. We caution the physician to exercise care and be alert for possible variations.

Treatment

We have found that early inoculation by a suitable education is often effective, and can even produce remission in early stages. Preliminary field trials have shown that, in some mild cases, temporary relief can be obtained by replacing the word “symbol” by the word “pattern” wherever it occurs. Middle-stage symbolophobia is difficult to treat, but studies indicate that a strict program of determined argument and explanation can produce relief in approximately 40% of cases. The works of Herb Simon are sometimes effective. Cases of quantum mysterianism are best handled by a specialist. The case studies described in (Hamerhoff, Kasniak & Scott, 1996) can provide a useful portfolio.

There is no known cure for the late stages of the disease, and isolation is advised.

Comment

Symbolophobia is infectious and seems to be spreading rapidly. While caution is necessary, we urge intellectual physicians to be alert and take vigorous action to combat the disease before it reaches epidemic proportions. In advanced cases, special care should be taken to wear protective clothing and use appropriate hygienic measures.

References

- Doctor, M., and Kahn P. K. 1989 *The Encyclopedia of Phobias, Fears, and Anxieties*. New York: Facts on File, Inc.
- Hamerhoff, S. R.; Kasniak, A. W.; and Scott, A.C. 1996. *Toward a Science of Consciousness: The First Tucson Discussions and Debates*, Cambridge, Mass.: The MIT Press.