Chapter V

A Framework for Understanding the Nature of Computers and Information

“What is a computer?” and “What is information?” are questions that the reflective user will sometimes ponder. These questions do not refer to what the computer means to us, subjectively (or intersubjectively) nor as enabling particular applications, whether controlling or emancipatory in nature; those issues were addressed in Chapter IV. What is at issue is the nature of the computer regardless of application and of (inter-)subjective meaning. What is it that differentiates computer from, for example, mechanical machine or electronic gadget on one hand, or from other information technology such as writing, printing, film, or video on the other? Pre-theoretical experience continues to assert that there is a difference.

But perhaps the comparison that has been most discussed is that between computer and human—the artificial intelligence (AI) question: can computers think or understand? A lot follows from any answer offered.

More recent is the question about the nature of cyberspace. John Perry Barlow’s (1996) Declaration of the Independence of Cyberspace is a polemic that claims cyberspace is a different type of reality, a reality of mind, information, thought, in which body and matter are either not needed or irrelevant. If this is so, he claims,
then we should have different social arrangements, different ethics, different views of what is considered criminal or legal, different legislative frameworks and different freedoms. The legal systems of the old, matter-based reality no longer apply.

In direct opposition to Barlow is the feminist notion of embodied knowledge. Not only does knowledge need a body, but propositional, conceptual knowledge is not true knowledge at all, or is at most only one kind of knowledge. There is a considerable amount of knowledge in our bodies as opposed to minds. The elevation of mind and logic over body and feeling is a conspiracy of masculinity. Haraway’s *Cyborg Manifesto* (1991) is perhaps the best-known version of this, a polemic like Barlow’s, but much longer and dressed up in academic observations and questions, but a polemic nonetheless.

How do we respond to such claims? How might we get behind the polemic, and engage critically with them? Is it possible that both claims could contain useful insight?

In attempting to understand the nature of computers and information, we cannot accept any of these views uncritically—nor do we accept their claim to set the agenda for debate. Nor do we accept naïve realism. Rather, we seek a framework that enables us to understand computers and information primarily as they present themselves to us in the lifeworld, as Dooyeweerd recommended (§2.4.2).

This chapter explores how Dooyeweerd’s philosophy might provide a basis for understanding the nature of computers, information, and programs. It does not attempt to arrive at a single “best” definition, but rather to provide a foundation for fruitful discourse. It begins by critically examining what is meant by the question “What is?,” then presents a Dooyeweerdian answer, and ends with discussing one extant framework and some of the earlier questions.

### 5.1 What is Meant by “What is?”?

The question, “What is a computer?” is often answered by reference to a definition. Webster’s Dictionary (1971) defines computer as, “a calculator esp. designed for the solution of complex mathematical problems; *specif:* an automatic electronic machine for performing simple and complex calculations.” But, for three reasons, such definitions do not help much. First, definitions tend to theorise the type of thing they define and privilege specialist views over everyday experience. This definition is far too narrow to understand the nature of computers today. Second, definitions change. In the 1993 edition of Webster’s Dictionary the second part has been replaced with “a programmable electronic device that can store, retrieve, and process data.” Third, definitions presuppose the meaning of such words as “programmable”, “electronic”, “device”, “store”, “retrieve”, “process”, and “data”, which all have to be understood
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