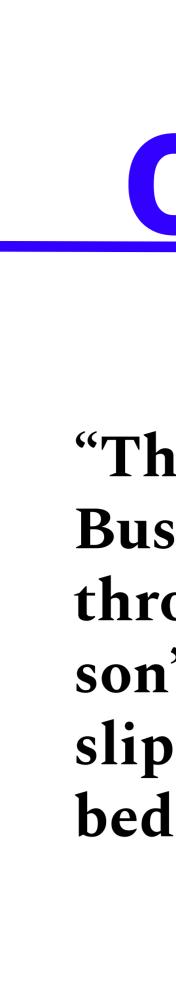
"Ideally, an exploratory hypertext should enable its audience members to view and test alternative organizational structures of their own and, perhaps, compare their own structures of thought with hypertext and traditional ones." [2]



"<u>Hypertext</u> and hypermedia are increasingly perceived as instances of a cardinal technology, i.e., tools for working at traditional tasks which have the effect of changing the tasks themselves." [2]

> "<u>Computers</u> have a particularly powerful impact, because they are machines for acting in language. In using them we engage in a discourse generated within the distinctions set down by their programmers. The objects, properties, and acts we can distinguish and perform are organized according to a particular background and pre-understanding. In most cases this pre-understanding reflects the rationalistic tradition we have criticized throughout this book." [1]

> > "Ontologically oriented design is therefore necessarily both reflective and political, looking backwards to the tradition that has formed <u>us</u> but also forwards to as-yet-uncreated transformations of our lives together." [1]

"Computers, like every technology, are a vehicle for the transformation of tradition / ... / We cannot even be fully aware of the transformation that is taking place: as carriers of a tradition we cannot be objective observers of it." [1]

tradition

They argue that the "essence of intelligence is to act appropriately when there is no simple pre-definition of the problem or the space of states in which to search for a solution" —a task for which the structures developed by artificial intelligence researchers and theorists were deeply inappropriate. [1]

Change is all around us. Technology is constantly evolving, there are new discoveries about human cognition, psychology, neurophysiology, medicine, artificial intelligence, every day we find new ways to express ourselves through art, music etc. We live in the evolution of our surroundings and yet one thing always remains the same: the way we learn about it. In the era of multiplicity our learning methods are still linear. Let's break the pattern and realise that the learning process is multiple yet integrative, difficult yet universal, not easily schematized yet apparently systematic, inherently personal and yet socially manifested. It is everything but linear. It is our contribution to society and to ourselves.

## cognition

"The human <u>mind</u> operates . . . by association," claimed Vannevar Bush in describing his Memex in 1945; and from Bush onward through Douglas Engelbart's Augment and even unto Ted Nelson's Xanadu, the visionaries have insisted that the sometimes slippery and obscure trails of hypertext rest upon an underlying bedrock of natural cognition. [2]

## We are engaging in a philosophical discourse about the self - about what we can do and what we can be. [1]



Indeed, hypertext tools offer the promise of adapting themselves to fundamental cognitive skills which experts routinely, subtly, and self-consciously apply in accomplishing <u>intel-</u> <u>lectual tasks</u>. 2

The body of knowledge about learning in psychology, cognitive science, neurophysiology, <u>artificial intelligence</u>, and so on, would itself make a rich exploratory <mark>hypertext</mark>. 2

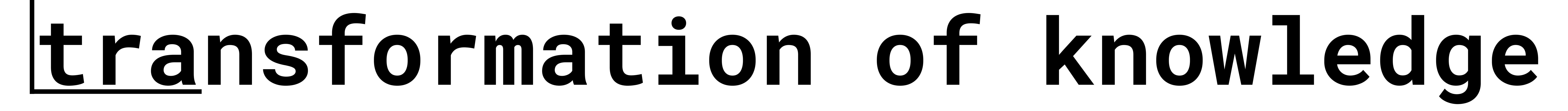


This description focuses on one thrust of the book, in which Winograd and Flores use a Heideggerian approach to uncover a rigidity within analytic computational models that, combined with inexpressible subtleties in human cognition, will never allow computers to attain <u>human-like intelligence</u>. 1

Our criticism of descriptions of human thought as "decision making" and language understanding as the manipulation of representations is not just a prediction that certain kinds of computer programs will fail. It reflects a deeper concern with the discourse and actions that are generated by a rationalistic interpretation of <u>human action</u>. 2

That is to say, their approach to combining cultural critique with computer science not only aims to result in better tool building, but also in a means for <u>self-conscious</u> cultural intervention. In fact, the two processes become one. [2]

Understanding Computers and Cognition—the book from which this selection comes—is often described as a stinging critique of artificial intelligence, and particularly of its <u>approach</u> to natural language understanding. 2

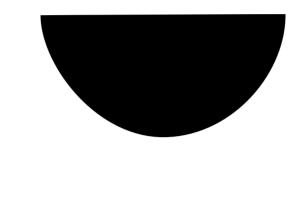


Understanding, plotting, navigating, and recreating knowledge structures is the essence of learning. As the current critical thinking across the curriculum craze attests; however, we are less and less certain of our ability to convey these skills. 1

# interaction

If machines could understand in the same way people do, interactions with computers would be equally <u>transparent</u>. [1]

This transparency of interaction is of utmost importance in the design of tools, including computer systems, but it is not best achieved by attempting to mimic human faculties. In driving a car, the control interaction is normally transparent. You do not think "How far should I turn the steering wheel to go around that curve?" In fact, you are not even aware (unless something intrudes) of using a steering wheel. Phenomenologically, you are driving down the road, not operating controls. [1]





We cannot directly impose a new structure on any individual, but whenever we design changes to the space of interactions, we trigger changes in individual structure— changes to the horizon that is the precondition for understand-1ng. 1

Other tools in this first set let you create automatically linked places for notes; select the pointer for navigation and other operations; use a powerful interactive mini-database to gather and link places in various documents; link places into paths across hierarchies in one or more documents; and choose among what we call Outline, Chart, or Map views of an emerging document. [2]

Even within areas such as law—where there is a primary concern with the social and ethical fabric—we find an interaction between the contextual and the <u>systematic</u>. The statutes and decisions provide a systematic framework that is the basis for argumentation in court. There are clear formal statements, such as "In order to be guilty of firstdegree murder, there must be premeditation." But of course these rest on understandings of terms like "premeditation," which call for contextual interpretation. 1

"Writing will increasingly be freed from the constraints of paper-print <u>technology</u> . . . and vast amounts of information . . . will be accessible immediately below the electronic surface of a piece of writing." (Heim, 1987)

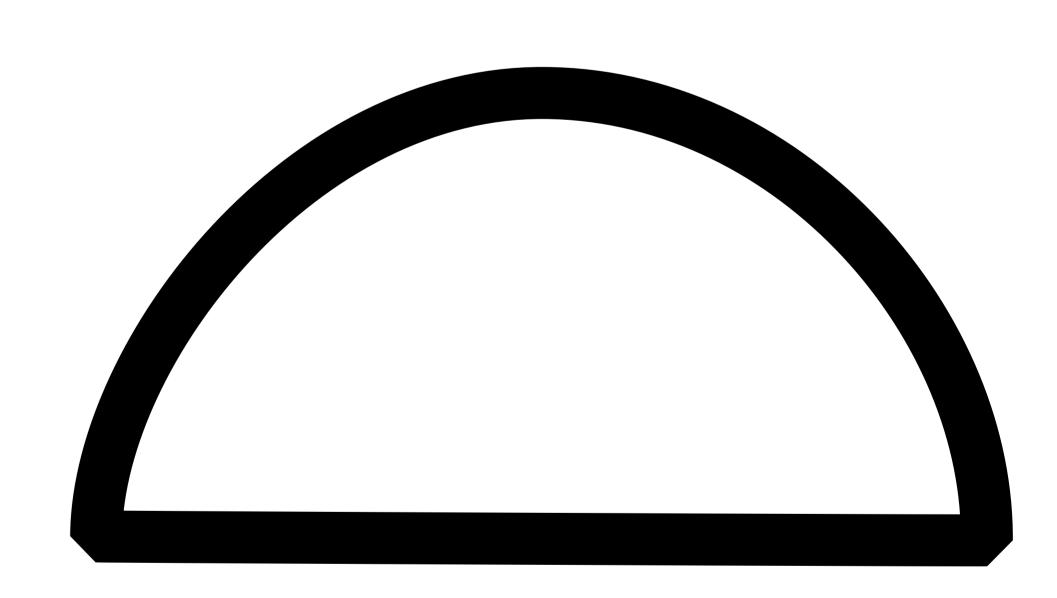
It is a fair bet to say that our age is at least as likely to be known in the future as the Age of Learning as it is as by the ordained cliche, the Information Age. [2]



We cannot even be fully aware of the transformation that is taking place: as carriers of a tradition we cannot be objective observers of it. [1]

One popular vision of the future is that computers will become easier to use as they become more like people. 1

The transformation we are concerned with is not a technical one, but a continuing <u>evolution</u> of how we understand our surroundings and ourselves—of how we continue becoming the beings that we are. [1]



### future

[1] Terry Winograd and Fernando Flores Using Computer: A **Direction for Design** 1986 [2] Michael Joyce Siren Shapes: **Exploratory and Constructive Hypertexts** 1988