

Being There: Putting Brain, Body, and World Together Again

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Language: The Ultimate Artifact

The basic idea is simple enough. Consider a familiar tool or artifact, say a pair of scissors. Such an artifact typically exhibits a kind of double adaptation—a two-way fit, both to the user and to the task. On the one hand, the shape of the scissors is remarkably well fitted to the form and the manipulative capacities of the human hand. On the other hand (so to speak), the artifact, when it is in use, confers on the agent some characteristic powers or capacities which humans do not naturally possess: the ability to make neat straight cuts in certain papers and fabrics, the ability to open bubble packs, and so forth. This is obvious enough; why else would we value the artifact at all?

Public language is in many ways the ultimate artifact. Not only does it confer on us added powers of communication; it also enables us to reshape a variety of difficult but important tasks into formats better suited to the basic computational capacities of the human brain.

Beyond Communication

We have called an action “scaffolded” to the extent that it relies on some kind of external support. Such support could come from the use of tools or from exploitation of the knowledge and skills of others; that is to say, scaffolding (as I shall use the term) denotes a broad class of physical, cognitive, and social augmentations—augmentations that allow us to achieve some goal that would otherwise be beyond us. Speech (be it vocal or “internalized”) functions so as to guide behavior, to focus attention, and to guard against common errors. In such cases, the role of language is to guide and shape our own behavior—it is a tool for structuring and controlling action, not merely a medium of information transfer between agents.

The theme of language as a tool has also been developed by the philosopher Christopher Gauker. Gauker’s concern, however, is to rethink the intra-individual role of language in terms of what he calls a “cause-effect analysis.” The idea here is to depict public language “not as a tool for representing the world or expressing one’s thoughts, but a tool for effecting changes in one’s environment.

One does not first entertain a private thought and then write it down: rather, the thinking is the writing.

We can be instructed to behave in a particular way. Responding to instructions in this way can be viewed simply as responding to some environmental event. We can also remember such an instruction and “tell ourselves” what to do. We have, in this way, internalized the instruction. We believe that the process of following instructions is essentially the same whether we have told ourselves or have been told what to do. Thus even here we have a kind of internalization of an external representational format.

Trading Spaces

Examples are legion, and they include the use of the Arabic numeral system (rather than, e.g. roman numerals) as a notation for arithmetic problem solving; the use of Venn diagrams for solving problems of set theory; the use of the specialized languages of biology, physics, and so on to set up and solve complex problems; and the use of lists and schedules as aides to individual planning and group coordination. All these cases share an underlying rational, which is to build some of the knowledge you need to solve a problem directly into the resources you use represent the problem in the first place.

Linguistic exchange and formulation thus plays a key role in coordinating activities (at both inter-personal and intra-personal levels) and in reducing the amount of daily on-line deliberation in which we engage.

The most obvious benefit of the linguistic encoding of thoughts and ideas, is, of course, that such encoding formats our ideas into compact and easily transmitted signals that enable other human beings to refine them, to critique them and to exploit them.

Moreover, the sheer number of intellectual niches available within a linguistically linked community provides a stunning matrix of possible inter-agent trajectories.

The key innovation of the Greeks was to begin to use the written medium to record the processes of thought and argument. Whereas previous written records contained only myths or finished theories (which were to be learned wholesale and passed down relatively unaltered), the Greeks began to record partial ideas, speculations with evidence for and against them, and the like. This new practice allowed partial solutions and conjectures to be passed around, amended, completed by others, and so on. It was the process of externally encoded cognitive change and discover.

Extended intellectual arguments and theses are almost always the products of brains acting in concert with multiple external resources. These resources enable us to pursue manipulations and juxtapositions of ideas and data that would quickly baffle the un-augmented brain.

Again and again we use words to focus, clarify, transform, offload, and control our own things.

Thoughts about Thoughts: The Mangrove Effect

If a tree is seen growing on an island, which do you suppose came first? It is natural (and usually correct) to assume that the island provided the fertile soil in which a lucky seed came to rest. Mangrove forests, however, constitute a revealing exception to this general rule. The mangrove grows from a floating seed which establishes itself in the water, rooting in shallow mud flats. The seedling sends complex vertical roots through the surface of the water, culminating in what looks to all intents and purposes like a small tree posing on stilts. The complex system of aerial roots, however, soon traps floating soil, weeds, and debris. After a time, the accumulation of trapped matter forms a small island. As more time passes, the island grows larger and larger. A growing mass of such islands can eventually merge, effectively extending the shoreline out to the trees. Throughout this process, and despite our prior intuitions, it is the land that is progressively built by the trees.

By writing down our ideas, we generate a trace in a format that opens up a range of new possibilities. We can then inspect and reinspect the same ideas, coming at them from many different angles and in many different frames of mind. We can hold the original ideas steady so that we may judge them, and safely experiment with subtle alterations. We can store them in ways that allow us to compare and combine them with other complexes of ideas in ways that would quickly defeat the unaugmented imagination.

By “freezing” our own thoughts in the memorable, context-resistant, modality-transcending format of a sentence, we thus create a special kind of mental object—an object that is amenable to scrutiny from multiple cognitive angles, is not doomed to alter or change every time we are exposed to new inputs or information, and fixes the ideas at a high level of abstraction from the idiosyncratic details of their proximal origins in sensory input.

Once the apparatus (internal and external) of sentential and text-based reflection is in place, we may expect the development of new types of non-linguistic thought and encoding—types dedicated to managing and interacting with the sentences and texts in more powerful and efficient ways.

Language is in many ways the ultimate artifact: so ubiquitous it is almost invisible, so intimate it is not clear whether it is a kind of tool or a dimension of the user.