Phonential Toys
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Curated by Sina Najafi

Works by Friedrich Fröbel, Jeannine Mosely, and Shea Zellweger

Selected by Norman Brosterman and Christine & Margaret Wertheim

Sina Najafi is Editor-in-Chief of Cabinet, a non-profit quarterly magazine of art and culture that reflects a wide range of subject matter of interest to contemporary artists, from the scholarly to the scientific and the curious.

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Cover: Shea Zellweger, Logozug, 1979, a metal tool showing the symmetries of the Logic Alphabet

Much to the chagrin of benevolent progressive souls, the Path of Pain remains as effective today as it has been for millennia. According to Nietzsche, it is the primary means by which we were transformed from an animal into what we are. "If something is to stay in the memory, it must be burned in: only that which never ceases to hurt stays in the memory," he writes in the Genealogy of Morals. “This is the oldest, and unhappily most enduring, psychology on earth.” The sphere of contractual obligations, for example, required the proto-human to learn to make and keep promises. Only pain, and large doses of it, could teach the absolute necessity of not renegotiating on promises. The law administered this pain carefully by outlining in minute detail the specific acts that the injured party could carry out on the body of the promise-breaker. This venerable tradition of pedagogy continues throughout the world, obviously less so in schools now than before, but it will remain in place as long as some accrued share of what is animal remains in us.

Viewers will be happy to know this exhibition is concerned with an alternative tradition, the more palatable Path of Wonder. I say tradition because it is neither the twentieth century nor the nineteenth nor even the Age of Enlightenment that recognizes the place of wonder and curiosity in learning, though it is true that eighteenth-century philosophers like Rousseau did much to rethink the idea of pedagogy from ground up. The story of Thales, the pre-Socratic philosopher, falling into a well at night while walking and observing the stars is doubly relevant here; the first is that it offers an example of a sense of wonder and curiosity beyond all measure. It is a window into an early moment in human history where the entire world was a cause for wonder. More importantly, though, Thales’s story was already circulating as a story by the time of Aristotle. As a story, it

On Wonder and Pain

There are two paths in pedagogy. One is the Path of Pain, and the other the Path of Wonder. Like many people, I have experienced both.

On the Path of Pain, memory and knowledge are instilled through calibrated infringements on the apprentice’s flesh. Personal examples include the slap my French teacher administered to me for “smirking” in the third grade and the caning I received in the headmaster’s office for baring my bottom in chapel when in seventh grade. I know I will never forget those moments of punishment, even when senile and barely able to recognize my own name. And I have to admit that knowing that I carry within me something burned into the hardware of my mind is at times comforting. These experiences are part of my flesh, in much the same way that the sins of the criminal are literally written onto his skin in Kafka’s The Penal Colony.

Kindergartner Alice Hubbard’s “beauty form” made with Fröbel’s 14th gift, paper- weaving, 1892.
gives the listener the satisfaction of being wondrous at someone else’s state of wonder and rapture. This vicarious experience gently nudges us away from a sense of wonder at the world and toward a sense of wonder at the human ability to wonder at the world. And such reflexivity is one root of what psychoanalysis calls transference, the structural identification that needs to be in place between student and teacher in any true pedagogy. The teacher knows something wonderful, or so the pupil imagines, and this fantasy makes the student porous to the supposed knowledge of the teacher. It is a form of love that is apparently directed toward the teacher but is in fact aimed at the knowledge that the teacher seems to harbor. It is, quite literally, philosophy (the Greek meaning “love of knowledge”)

Without transference, not knowledge but raw information is passed from one person to another.

The idea of a formal pedagogical system based not on the memorization of facts and information but on the development of the “natural” curiosity inherent in every child emerged out of the eighteenth century. One book above all signaled the sea-change that education was about to undergo—Jean-Jacques Rousseau’s *Emile*, where we find the following summary.

“Remember that this is the essential point in my method: Do not teach the child many things, but never let him form inaccurate or confused ideas.”

An anecdote about Immanuel Kant succinctly demonstrates the impact that Rousseau’s tract on education had on the world. It is said that Kant took a walk at the same time every day; he was so punctual that the inhabitants of Königsberg set their clocks by his walk. The only occasion on which he forgot his walk was the day he was reading *Emile*.

In contrast to the educational systems in place at the time, Rousseau’s proposal emphasized play and first-hand experience. Books, for example, were banned before the age of twelve. The educational reforms that *Emile* suggested soon resulted in a number of famous experiments: Johann Pestalozzi’s school in Yverdon, Switzerland, and more lastingly, his disciple Friedrich Fröbel’s late 1830s invention—Kindergarten. As Norman Brosterman has outlined in his book *Inventing Kindergarten*, features that distinguished the new pedagogy from previous systems included the central role of play, of self-initiated activities guided by the child’s own sense of curiosity, and of the materiality of conceptual ideas. This latter gave rise to the notion of an “alphabet” of forms, a set of material objects whose manipulation would allow the child to sense the unity of the three spheres of life, science, and art. Originally a crystallographer, Fröbel devised objects and exercises that would develop the child’s perception of form to such a degree that the underlying unified structure of the universe could be grasped. The revolutionary effect these ideas would have on the rise of abstraction in modern art is meticulously documented in Brosterman’s book.

Where the instruments needed for the Path of Pain are well-known and quite limited (cane, back of hand, shame), the Path of Wonder is always in the process of producing new devices. Juxtaposed with artifacts from Fröbel’s original system of kindergarten, the Logic Alphabet devised by Shea Zellweger and the computational origami invented by Jeanine Mosely both follow Fröbelian principles where the tactile, the visual, and the conceptual are merged into one. Playing with Zellweger’s beautiful devices and with Mosely’s seductive paper confections is an object lesson in the structures of logic and geometry respectively, a pedagogy that happens as much through our fingers and eyes as it does with the mind. Or as Rousseau puts it in *Emile*, “Our first teachers of philosophy are our feet, our hands, and our eyes.”

Sina Najafi
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