BOOKS: PSYCHOLOGY

The Meaning of Make-Believe

Alison Gopnik

Imagine the following scenario: You walk into a room and are greeted by a wild-haired person wearing a piece of sparkly cloth around her shoulders and a cardboard crown on her head. In an unnaturally deep and loud voice she informs you that she is the Queen of Fairyland and proceeds to summon invisible spirits to serve her. Where are you? Three possibilities spring to mind. You are in the schizophrenia ward of a psychiatric hospital. You are attending a performance of *A Midsummer Night's Dream*. Or you are in preschool.

Young children typically spend hours pretending. Why? Until recently, the standard answer was that they behaved in this strange way because they thought in a strange way. Both Freud and Piaget, for example, believed that young children were fundamentally irrational. They were supposed to loosely associate ideas rather than organizing them logically. Their thoughts were supposed to fulfill wishes, rather than reflect reality. Children were supposed to be unable to think causally or to discriminate fantasy from fact.
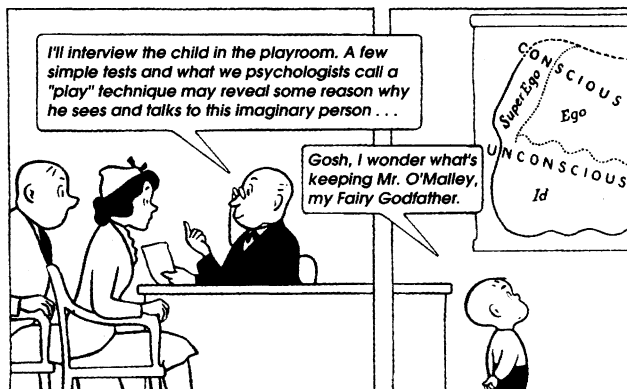
Paul Harris's intriguing and lucid book summarizes twenty years of empirical research, much of it from his own lab, that definitively disproves these views. In the author's simple but clever studies, even two- and three-year-olds turn out to be adept at distinguishing pretense from reality. They may spend hours pretending, but they know they are pretending. They don't try to eat the pretend ice cream or talk on the pretend telephone, and they can describe with great accuracy how thoughts and facts differ. Moreover, children can make sophisticated causal inferences and they can even reason counter-factually. In Harris's studies, for example, three-year-olds can explain that if an imaginary Teddy hadn't spilled the ink, his hands would not be dirty. Other developmental psychologists have come to similar conclusions. Marjorie Taylor (*1*) has found that children with imaginary friends are perfectly aware that their companions really are imagi-

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nary (though they are no less beloved because of it); Henry Wellman showed that even the youngest children can provide appropriate causal explanations for simple events (*2*).

These empirical advances have completely reversed the traditional idea of the irrational, fantasy-ridden child. But they leave us with a puzzle that is the central theoretical question of *The Work of the Imagination*. If young children are so good at understanding reality and differentiating it from pretense, why do they spend so much time pretending? Preschoolers understand the real world very well, but apparently (all things considered) they would prefer to live in the unreal one.

Harris's answer is that the children's pretenses really are more like theater than like psychosis. He points to studies that show how

> **The Work of the Imagination**
> *by Paul L. Harris*
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> Blackwell, Oxford, 2000. 234 pp. $59.95, £50. ISBN 0-631-21885-8. Paper, $26.95, £14.99. ISBN 0-631-21886-6.

I'll interview the child in the playroom. A few simple tests and what we psychologists call a "play" technique may reveal some reason why he sees and talks to this imaginary person . . .

Gosh, I wonder what's keeping Mr. O'Malley, my Fairy Godfather.

deftly adults take on the perspective of a fictional narrative. Ordinary, everyday, unhistrionic adults are remarkably good at putting themselves into the shoes of a fictional character. They even generate, in detail, the appropriate fictional spatial orientation, and they genuinely experience the appropriate fictitious emotions. Becoming caught up in a story, it seems, is not just a rarified experience of Shakespeare-lovers, but a deep part of our human cognitive competence.

Harris argues convincingly that children are doing just this in their pretend play. Like adults, they can follow through on fictional premises even when they are perfectly aware that these are fictional. In fact, children do so in ways that reveal the extent of their causal knowledge. Two-year-olds predict that imaginary tea spilled on an imaginary Teddy

will make the Teddy wet and mad, not dry and happy. And although children may be genuinely frightened by the imaginary monster under the bed, we adults, after all, genuinely weep over Romeo and Juliet.

But this still leaves the puzzle of why human beings evolved this fictive capacity at all. It is easy to see why understanding the real world would be adaptive. But why would telling and understanding patently untrue stories help us to survive? Harris suggests that the answer involves language. Children begin to pretend at about the same time they begin to speak, and there is some evidence that language, drama, and art all evolved at around the same time. Harris points out that in order to take advantage of linguistic information from others we need to take their narrative perspective, even if the story they tell is far removed from our immediate experience.

This definitely seems to be on the right track, but the problem that remains is why so much pretense and fiction should be so drastically removed from any possible experience, our own or others. Why should evolution have designed us to believe in fairies, or at least to act as if we do? The promise of Harris's book is that further empirical developmental research will eventually tell us how our sojourns in the imaginary worlds of Teddy and Titania help us to get along in the real one.

References
1. M. Taylor, *Imaginary Companions and the Children Who Create Them* (Oxford Univ. Press, Oxford, 1999).
2. H. M. Wellman, A. K. Hickling, C. A. Schult, *New Dir. Child Dev.* No. 75 (spring 1997), p. 7.

BOOKS: COMPUTING

Grappling with Qubits

Günter Mahler

Is physics useful? Considering the endless list of technical devices that support our everyday life, there can be no serious doubt. Is quantum physics useful? Surprisingly, the answer to that question is far less clear. Although any physical system, when studied on a sufficiently fundamental level, is believed to be quantum in nature, more often than not its function can be described in classical terms. This approach even holds for such macroscopic

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