

Possible Worlds: Why Do Children Pretend

By Alison Gopnik

Human beings don't live in the real world. The real world is what actually happened in the past, is happening now, and will happen in the future. But we don't just live in this single world. Instead, we live in a universe of many possible worlds, all the ways the world could be in the future and also all the ways the world could have been in the past, or might be in the present. These possible worlds are what we call dreams and plans, fictions and hypotheses. They are the products of hope and imagination. Philosophers, more drily, call them "counterfactuals."

Counterfactuals are the woulda-coulda-shouldas of life, all the things that might happen in the future, but haven't yet, or that could have happened in the past, but didn't quite. Human beings care deeply about those possible worlds—as deeply as they care about the real actual world. On the surface counterfactual thinking seems like a very sophisticated and philosophically puzzling ability. How can we think about things that aren't there? And why should we think this way instead of restricting ourselves to the actual world? It seems obvious that understanding the real world would give us an evolutionary edge, but what good do we get from imaginary worlds?

We can start to answer these questions by looking at young children. Is counterfactual thought present only in sophisticated grown-ups? Or can young children think about possibilities too? The conventional wisdom, echoed in the theories of both Sigmund Freud and Jean Piaget, is that babies and young children are limited to the here and now—their immediate sensations and perceptions and experience. Even when young children pretend or imagine they can't distinguish between reality and fantasy: their fantasies, in this view, are just another kind of immediate experience. Counterfactual thought requires a more demanding ability to understand the relation between reality and all the alternatives to that reality.

Cognitive scientists have discovered that this conventional picture is wrong. We've found out that even very young children can already consider possibilities, distinguish them from reality, and even use them to change the world. They can imagine different ways the world might be in the future and use them to create plans. They can imagine different ways the world might have been in the past, and reflect on past possibilities. And, most dramatically, they can create completely imaginary worlds, wild fictions, and striking pretenses. These crazy imaginary worlds

are a familiar part of childhood—every parent of a three-year-old has exclaimed, "What an imagination!" But the new research profoundly changes the way we think about those worlds.

In the past ten years we've not only discovered that children have these imaginative powers—we've actually begun to understand how these powers are possible. We are developing a science of the imagination. How could children's minds and brains be constructed to allow them to imagine this dazzling array of alternate universes?

The answer is surprising. Conventional wisdom suggests that knowledge and imagination, science and fantasy, are deeply different from one another—even opposites. But the new ideas I'll outline show that exactly the same abilities that let children learn so much about the world also allow them to change the world—to bring new worlds into existence—and to imagine alternative worlds that may never exist at all. Children's brains create causal theories of the world, maps of how the world works. And these theories allow children to envisage new possibilities, and to imagine and pretend that the world is different.

THE POWER OF COUNTERFACTUALS

Psychologists have found that counterfactual thinking is absolutely pervasive in our everyday life and deeply affects our judgments, our decisions, and our emotions. You would think that what really matters is what actually happens, not what you imagine might have happened in the past or could happen in the future. This is particularly true of counterfactuals about the past—what might have happened but didn't—the woulda-coulda-shouldas of life. Yet the woulda-coulda-shouldas have a deep impact on experience.

In one experiment, the Nobel Prize-winning psychologist Daniel Kahneman and his colleagues asked people to imagine the following sort of scenario. Mr. Tees and Mr. Crane are both in a taxi to the airport, desperate to catch their respective planes, which are both scheduled to take off at 6:00. But traffic is impossibly snarled and the minutes tick by. Finally, at 6:30 they arrive at the airport. It turns out that Mr. Tees's flight left at 6:00 as planned but Mr. Crane's flight was delayed till 6:25 and Mr. Crane sees it take off as he arrives. Who is more upset?

Just about everyone agrees that Mr. Crane, who just missed his flight, will be much more unhappy. But why? They both missed their flights. It seems that what is making Mr. Crane unhappy is not the actual world but the counterfactual worlds, the ones in which the taxi arrived just that much earlier or the plane was delayed just a few minutes more.

You needn't turn to artificial scenarios like this one to see the effects of counterfactuals. Consider the medalists in the Olympics. Who is happier, the bronze medalist or the silver? You'd think that objectively the silver medalist, who, after all, has actually done better, would be happier. But the relevant counterfactuals are very different for the two. For the bronze medalist the relevant alternative was to finish out of the medals altogether—a fate she has just escaped. For the silver medalist, the relevant alternative was to get the gold medal—a fate she has just missed. And, in fact, when psychologists took clips of the medals ceremonies and analyzed the facial expressions of the athletes, it turned out that the bronze medalists really do look happier than the silver medalists. The difference in what might have been outweighs the difference in what is.

Like Mr. Crane at the airport, or the silver medalist, people are most unhappy when a desirable outcome seems to be just out of reach, or to have just been missed. As Neil Young adapted John Greenleaf Whittier: "The saddest words of tongue and pen are these four words, 'it might have been.'"

Why do we humans worry so much about counterfactuals, when, by definition, they are things that didn't actually happen? Why are these imaginary worlds just as important to us as the real ones? Surely "it is, and it's awful" should be sadder words than "it might have been."

The evolutionary answer is that counterfactuals let us change the future. Because we can consider alternative ways the world might be, we can actually act on the world and intervene to turn it into one or the other of these possibilities. Whenever we act, even in a small way, we are changing the course of history, nudging the world down one path rather than another. Of course, making one possibility come true means that all the other alternative possibilities we considered won't come true—they become counterfactuals. But being able to think about those possibilities is crucial to our evolutionary success. Counterfactual thinking lets us make new plans, invent new tools, and create new environments. Human beings are constantly imagining what would happen if they cracked nuts or wove baskets or made political decisions in a new way, and the sum total of all those visions is a different world.

Counterfactuals about the past, and the characteristically human emotions that go with them, seem to be the price we pay for counterfactuals about the future. Because we are responsible for the future, we can feel guilty about the past; because we can hope, we can also regret;

because we can make plans, we can be disappointed. The other side of being able to consider all the possible futures, all the things that could go differently, is that you can't escape considering all the possible pasts, all the things that could have gone differently.

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