

# Was Einstein a Choreographer?

By Liz Lerman

All the biographies of Albert Einstein eventually tell the story of his “thought experiments.” In this seemingly unusual manner of thinking, the scientist would ask himself a question, then picture intently in his mind a series of imaginary events in a cause-and-effect sequence. Given what he was asking, the pictures he established were always moving. It was a kind of physics theme park in which the rides whisked through the universe with a very curious person on board. This mental activity led Einstein to some of his discoveries.

Ask a difficult enough question, and you will need more than one discipline to answer it. And so the young Albert gaily envisioned himself in a multitude of situations and eventually arrived at his answers. Later he had to also get the math to work. That part I think he did with paper and pencil.

What interests me is that he was able to stay in his imagination long enough to visualize the story to its ending. I think that most people recognize the pictures that move fleetingly through their minds. These images often come unbidden and are therefore deleted as soon as possible by the mere act of turning them away, turning our attention to something else, perhaps because we hear the voice of the teacher in us telling us to stop day-dreaming.

Some people, artists especially, have the discipline or skill to successfully harness these unbidden ideas for what they are or can be. If heeded or observed for a moment, they can turn our projects down new paths. Sometimes you have to interview yourself to recognize something of use or importance in these slyly-emerging images. But just a lingering of thought can turn the page on a new chapter for a dance itself, or maybe just the costume, or a light source, or pattern of movement.

But what Einstein did was something more than this. Because -- beyond perhaps the first thought -- these pictures were not just “coming to him.” Once he had the initial picture in his mind he stayed with its implications *in his mind* for a very long time, sorting out all the impracticalities, the extra problems born by taking a particular route, even backtracking and re-directing when he needed to.

That is what seems akin to choreography. I can spend hours in my head picturing the stage, and then moving the dancers through a thousand steps trying out different approaches to piece of music. Or I can sequence and then re-sequence sections in order to see what might be more effective. Or I might just play with what will happen when the curtain opens... This imagination of ours is the perfect computer...able to change the field of vision in a flash and able to work on no battery for a long period of time.

When I started reading about Einstein and came across these references it made me wonder what to call my own cranial activity all these years? “Thought experiment” seems like a good description of this mental choreography. I had actually been thinking it was some kind of cross between a lovely fantasy life and what others called imagination. What I know about it is that it is like a vast push-pull: a great volley in an excellent tennis match. The images appear, one pushes at them, one creates new ones, and one deletes them, puts several in play at once, absorbs the information and tries from the start all over again. And suddenly in the midst of all that pushing comes a new thought or image that shifts all the thinking in a split second. And out of all that backing-and-forthing, painting and erasing suddenly comes a new discovery. It doesn’t have to be relativity each time...just a good solution to a little choreographic problem will do.

Anyone can do it. It just takes practice, concentration, and a really good question.

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