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The Magic Half



Magicians Teach Scientists!? p. 10
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THINK ABOUT IT: Which would work better on a string phone — fluffy knitting yarn, or tightly wound string? Why?



Voices in the Air: Ventriloquism

by Karleen Tauszik

Josh slumped in his seat, waiting for the show to begin. “You’re going to love this ventriloquist!” Grandma insisted.

Doesn’t she know I’m too old to believe a puppet show? Seriously! Josh sighed as he wondered how long the performance would take.

Soon the house lights dimmed and the show began. Before he knew it, Josh was listening intently to the quick banter and funny jokes between the ventriloquist and the puppet, or more correctly, the vent figure. By the end of the show, he had to admit his grandmother was right.

How did the ventriloquist make the figure seem so alive? So believable? How can I learn to throw my voice like that? Josh wondered.

The Magic of Ventriloquism

Like skilled magicians, ventriloquists trick us. Despite our common sense, we soon relax and enjoy the show, lulled into accepting a dummy as a real character with a voice and a mind of its own.

Both ventriloquists and magicians rely heavily on the art of misdirection. They steer the attention of the audience away from how the trick is done, and toward the final desired effect. For example, in a vanishing coin trick the magician looks at his hand as it opens, showing that the coin is gone. His gaze and gestures lead us to look there too, while his other hand holds the coin that “disappeared.” In the same way, the ventriloquist looks at the figure as he talks to him, so the audience looks there too. They are distracted from their intention of watching to see if the ventriloquist’s lips move.

Another Trick up the Ventriloquist’s Sleeve

Hearing is the easiest of the five senses to trick, so ventriloquists use this to their advantage. Sound is transmitted by molecules, which vibrate as they pass through various

TRY IT YOURSELF The next time you’re going to be around a toddler, take a puppet and give it a voice different from your own. See how easily the young child engages with the puppet character. Even if your lips are moving, the child will talk to the puppet as if it is really doing the talking. Then switch to your normal voice, and have the puppet “talk.” Notice how quickly the child looks at you instead of at the puppet.

materials. Solid materials conduct sound best, because their molecules are packed tightly together. Gases, such as air, are poor conductors of sound. That’s why when you’re in a crowd and someone calls your name, it’s hard to tell where to turn.

Think about the “telephone” experiment, where you have two cups joined by a string. If your friend whispers into one cup, you can hear it through the string. That’s because string is a bunch of fibers twisted together, making its molecules denser than air. When the string is pulled taut, it’s even denser.

“Throwing” Your Voice

Back at our ventriloquist show, let’s imagine that the show has begun, but the figure is still in its trunk. He

wants to come out,
so he says so!

How does the voice seem to come from the trunk?

The idea that a ventriloquist can “throw” his voice is a myth that has persisted for thousands of years. Since a voice has no weight or substance like a ball or a rock, it can’t be thrown. The ventriloquist uses sound traveling through air along with misdirection to entertain us with his own form of magic.

First, when the ventriloquist comes on stage, he talks in his regular voice. He may introduce himself or tell a few jokes. Our brain gets used to what his voice sounds like, and it connects that voice with the ventriloquist.

We do this all the time without realizing it. The process is called

I’m Hank.

My name is Paul E. Crackers.

I’m Seymour the Seal.



audio-visual integration, and we use it when we watch TV, see a movie at the theater, or even when we see someone mowing their lawn. Our eyes see lips moving on the screen, or the lawnmower being pushed. Our ears hear the voices from the show or movie, or the engine of the lawnmower. The brain connects what we see and hear, integrating the audio and the visual.

As our ventriloquist on stage is talking, all of a sudden he's interrupted by another voice! If we had a string telephone up to the ventriloquist's mouth we would know it was his voice, right? But we don't. The sound is travelling through the air, so our mind isn't sure where it's coming from. For a brief moment, we have a sound we cannot connect with a visual source.

While our mind is confused, the ventriloquist quickly uses misdirection to make us think the new voice came from the trunk. He may look toward the trunk with a surprised expression. He may respond to

the figure, as he walks toward the trunk. He has completed the audio-visual integration for our brain. And once our brain makes that connection, we can enjoy (and believe) the rest of the show.

The Science of Illusion

Like a magician, the ventriloquist has created an illusion by combining misdirection with the sound of a new, unsuspected voice traveling through air. Neuroscientists and psychologists are intrigued by how this happens. Their primary interest is in that brief moment when our brain is "tricked" into laying aside our common sense, and responding as if the ventriloquist's figure can actually talk. . .or a coin can truly vanish. To study the neural processes that take place while someone watches a magic trick, scientists analyze what people see

(their visual experience), what they think they see (their cognitive experience), and how their attention, focus, and neurons are manipulated in the process.

By studying these techniques that magicians and ventriloquists have used for thousands of years, scientists hope their findings will lead to diagnostic and treatment methods for people with attention deficits from injuries, ADD (attention deficit disorder), Alzheimer's disease, and similar brain disorders.

So maybe, like Josh, you're too old to believe puppet shows. Or you've read all the magic books at your library and think you know all the techniques. Still, your brain will still make sure you enjoy the illusions. . .and the show! 🎩

Karleen Tauszik writes articles and stories for children from her home in Florida. Her husband is a professional ventriloquist and magician.



Zachariah here.

I'm Lowell Tauszik with my Razzmatazz Entertainment family.

I'm Joey.

