In the past year, though, a few researchers have begun to realize that magic represents something more — a deep and largely unexplored store of knowledge about the human mind.

At a major conference last year in Las Vegas, in a scientific paper published last week and another due out this week, psychologists have argued that magicians and their audiences are two-sided ways to use tools people have been using in cooking-up. In informal research into how we can understand the world around us, as well as in studying the mechanisms of deception revealed the workings of our body's defenses, those psychologists believe that these ways to a talented magician can start creating our perceptual system will allow us to better grasp how the system is put together.

If magicians and cognitive neuroscientists are getting at similar questions, but while neuroscientists have been looking at this for a few years, magicians have been looking at this for centuries, millennia probably," says Susan Marterian-Cosolo, a neuroscientist at the Center for the Neurocognitive Institute.

As magicians have long known and neuroscientists are increasingly discovering, human perception is a jump-started apparatus, full of gaps and easily manipulated. The collaboration between science and magic is still young, and the findings preliminary, but interest among scholars is only growing.

A great deal of the success of a place of magic is simply getting the audience's attention and sending it to the wrong place — to a right-hand flourish, a wand-waving, a sight-abrupt, a posited or placed a and then a theme. Magic shows are masterpieces of misdirection.

For years, cognitive scientists thought of perception as a movie camera, something that reconceptualized the world in its spurious detail. Over the past decade, though, that model has been increasingly questioned. For one thing, people have a pronounced tendency to missee things that are happening right in front of them. Daniel Simons, a psychologist at the University of Illinois, did a series of small-famous studies in the late 1990s that showed the extent of this cognitive blindness. In one, people were approached by someone asking them for directions, only to have, in the middle of the conversation, that person requested by another chicken passed the notice.

In another study, people were shown a movie clip of two teams, one in black shirts and one in white, each passing a basketball around. The subjects were asked to count the number of passes one of the teams made. Half said afterward that they had noticed the woman in a girl's suit who, midway through the clip, stripped through, paused, and beat her chest.

Because of work like this, a new model has arisen over the past decade, in which visual cognition is understood not as a camera but something more like a flashtube that builds a breakdown. At any particular instant, we can only see detail and color in the small patch we are concentrating on. The rest we fill in through a combination of memory, prediction and a crude peripheral sight. We don't take in our surroundings so much as actively and constantly construct them.

"Our picture of the world is kind of a virtual reality," says Ronald A. Reimer, a professor of computer science and psychology at the University of British Columbia.

"It's a form of illusory hallucination."

The benefit of these sorts of cognitive shortcuts is that they allow us to create a remarkable rich image of our environment despite the fact that our two optic nerves have roughly the resolution of our cell phone camera. We don't have to waste time making out every car on the highway to understand that they are, indeed, cars, and to make sense of how they are moving our minds can simply approximate from the thousands of cars we have already seen in our lives.

But because this method relies so heavily on expectation — not only to fill in the backdrop around us but to determine where to send what psychologists call the "bottomless spotlight" — we're especially vulnerable to those who know our expectations and can manipulate them, someone like a magician.

Misdirection is, in a sense, the conjurer's tool that is easiest to understand — we miss things simply because we aren't looking at them. Other effects, though, are more mind-blowing. Often eye-tracking studies show that subjects can be looking right at an object without noticing it; car accident survivors report a similar paralysis. Or, with just a little encouragement, a person can be made to see something where there's nothing.

The vanishing ball illusion is one of the most bizarre tricks a magician can perform: a ball is thrown repeatedly into the air and caught. Then, on the follow-through, it disappears in midair. In fact, the magician has merely thrown the last throw, following the ball's imagined trajectory with his eyes while keeping it hidden in his hand.

But if the technique is easily explained, the phenomenon itself is not. If done right, the trick actually makes observers see the ball rising into the air at the last toss and vanishing at its apex. As Reimer points out, this is something more powerful than merely getting someone to look in the same direction — it's a demonstration of how easy it is to nudge the brains into the realm of actual hallucination. And cognitive scientists still don't know exactly what's causing it to happen.

"There's a value in simply coming to grips with the gaps and limits in our awareness," Motrozel-Fridman's words, woven in a machine, are so much more manipulable and more likely to put ourselves in compromising situations if we don't know where we don't know. The whole thing is knowing that you've got limitations.

"The fundamental thing we do every day is uncertain what's happening, it's this diagnosis of what the signals coming in to our eyes are supposed to mean," Teller says. "In other words, I must not walk into the sky. Is that line coming around the corner? How much can I see of it? Oh, no, it's only a bicycle.""

What draws people to magic, he believes, is an appreciation of how slippery that seemingly simple diagnosis can be. "They realize that the best way to stop the power of perception is to do it themselves."