



## SCIENCE & TECHNOLOGY

# Pianists Learn to Play with an Extra Robotic Thumb

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British researchers have explored how a robotic finger can affect a person's ability to play the **piano**.

The experiment involved attaching a robotic finger on the right hand of 12 test subjects. Six of the individuals were piano players. Six were not.

The leader of the project was Professor Aldo Faisal, a **neuroscientist** at Britain's Imperial College of London. Being a piano player himself, he said he wondered how his playing ability would be affected if he had an extra finger.

"So I started really with a robotics **challenge**," Faisal told Reuters news agency. "Can we build a robotic thumb that can sit on the opposite side of the right hand and play music with it?"

The robotic finger was controlled by electrical signals produced by the foot movements of the piano players.

Faisal said the robotic finger felt very unnatural and was difficult for players to get used to at first. But after a few hours using the device, he said it almost felt like "an **extension** of you."

Faisal noted that within an hour of being fitted with the robotic finger, six players had learned to use it effectively with the piano keys.

"There's a **dedicated** area of your brain responsible for every single finger," Faisal said. "If I give you an eleventh finger...are you processing it the same way as you're processing a regular **limb**?"

Researchers involved in the experiment reported that the six pianists and six non-playing volunteers all quickly **adapted** to using the extra thumb. They said this result suggests people are not limited to using an extra finger only for things they already know how to do.

"The fact that you can actually play with eleven fingers...has to do with how your brain is actually wired up," Faisal said. "So what we can say is it's a proof of existence. We can do it. So the next challenge would be, can we do two thumbs, so 12-fingers?"

He added: "It's a very exciting moment in time now to see what we can do."

I'm Bryan Lynn.

*Reuters reported this story. Bryan Lynn adapted the report for VOA Learning English. Mario Ritter, Jr. was the editor.*

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## Words in This Story

**piano** – *n.* a large musical instrument with a keyboard that you play by pressing black and white keys and that produces sound when small hammers inside the piano hit steel wires

**neuroscientist** – *n.* a scientist who studies the nervous system and the brain

**challenge** – *n.* a difficult task or problem

**extension** – *n.* the act of adding something to make it larger or longer

**dedicated** – *adj.* used only for one particular purpose or job

**limb** – *n.* an arm or leg of a person or animal

**adapt** – *v.* to change something to fit different conditions or uses

