

台大杜鵑花節錯覺展：科學的藝術與藝術的科學

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**Close Encounter – Illusions where science meets art**

Shinsuke Shimojo's work in collaboration with National Taiwan University

## 這是誰的手？

## WHOSE HAND IS THIS?

### 要做什麼？

站到箱子旁邊，然後將你的左右手分別放入箱子的兩個隔間中，把手懸空擺成對稱的姿勢（相對於鏡子），不要碰到箱子的底部或者內部。調整頭的位置直到看不到實際的右手，但能以傾斜角度看到鏡子反射的右手鏡像，再更進一步調整頭的位置到能夠看到右手鏡像剛好在你左手的位置（如果有困難，可以請解說員幫忙）。現在，當你看著鏡子內反射出來的右手時，慢慢地同時握緊和放鬆你的雙手。你覺得會發生什麼事情？

【原創作品為醫療設備，由拉瑪錢德朗設立】

### What to do?

Stand square to the box, and put your hands into the left and the right compartments of the box, each. Do not touch the bottom or the wall, but keep the hands in the air with a symmetrical posture (with regard to the mirror). Adjust your head position so that you do not directly see your right hand, but can look into the mirror in an oblique angle. Adjust further, so that you do see the mirror-reflected image of your right hand approximately at the felt location of your left hand. (If difficult, ask the instructor for help.) Now, slowly close and open your hands simultaneously and symmetrically, while staring at the mirror-reflected image of the right hand. What do you think will happen?

(The original version was created as a therapeutic devise by V. S. Ramachandran.)

### 發生了什麼事？

每個人都理所當然地覺得自己的手是屬於自己的，但是根據最新的認知神經科學研究，這是基於大腦整合動作指令和其他各種感官回饋而得到的。在這裡你看到的左手事實上是你右手的鏡像，它卻取代了你左手的位置，藉由雙手的同時運動，左手指尖的運動回傳成為適當的本體感覺回饋，再加上注意力集中在右手鏡像，便將此鏡像解讀成你真正的左手。

### 更多嘗試與體驗

- \* 保持你的雙手靜止在對稱的姿勢，請你的朋友或者解說員同時觸碰你雙手的相同位置，看看這效果是不是變得更真實。
- \* 但是，要是突然只碰觸其中一隻手。哇，你覺得怎樣？

### What's going on?

One feels one's own hand as its own, and takes it as a matter of course. But according to the latest cognitive neuroscience, it is based on the brain's integration of motor commands and various sensory feedbacks. Here, whereas the hand image you see on your left side is actually that of your right hand, it overlaps with your felt left hand in position. Moreover, there is appropriate proprioceptive feedback of your finger movements. Together with your attention focused there, the visual image may be interpreted as your "real" left hand.

### Other things to try

- \* Keep your hands static in the symmetric posture. Ask your friend or the instructor to tap on the same parts of both hands exactly simultaneously. See if the effect becomes even more real?
- \* But then, the person can suddenly tap only on one hand. Woops, how do you feel?