

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

傾斜屋

ROOM OF COORDINATES

要做什麼？

請脫掉你的鞋子後站到房間裡。先站著觀察一下整個房間的方向（傾斜），然後照著地板上的標示躺下來。你覺得會發生什麼事情？

【原創作品由田中紀之、小林敦與下條信輔在1996年於東京科學博物館設立】

What to do?

Take off your shoes, and come inside the room.

Observe the entire room orientation (tilt) in your upright posture first, and then lie in the spine position as indicated on the floor.

What do you think will happen?

(The original version was created by Noriyuki Tanaka, Atsushi Kobayashi & Shinsuke Shimojo at Tokyo Science Museum in 1996.)

發生了什麼事？

為了判斷我們與環境的空間關係，大腦整合諸多感官訊息，例如視覺表面、從腳而來的本體感覺、與地心引力有關的肌肉張力以及耳內前庭的訊息等。躺在地板上使得我們看不到水平地板，並且減弱了地心引力所提供的線索，此時，我們的視覺系統傾向將視野中大部分的平面看成水平或垂直的，因此在這傾斜屋中的天花板和牆壁分別被看成水平及垂直的了。

更多嘗試與體驗

- * 坐下後將腳伸直，慢慢地從坐姿變成躺著。看看參照的環境在哪裡改變？
- * 試著與房間傾斜方向垂直的角度躺下，你有感覺到錯覺嗎？
- * 當你躺著的時候，請你的朋友在你的腳邊單腳站著。看起來很奇怪嗎？
- * 朝空中丟一個球或者是帽子，並試著接住它們。

What's going on?

The brain judges spatial relationship of the self and the environment, by integrating various sensory cues such as visual surfaces, proprioception from the feet, kinesthetic and vestibular sensation related to the gravity, etc. Lying in the spine posture eliminates visibility of horizontal floor, and weakens all the gravity-related cues. The visual system tends to interpret the majority surfaces in the visual field as cardinal, thus the ceiling and the walls are perceived as horizontal/ vertical.

Other things to try

- * Sit down with your legs stretched, and slowly change the angle of your upper body between upright and lying. See where the frame of reference switches.
- * Lie in orthogonal angle with regard to the direction of tilt. Do you still experience the illusion?
- * Ask your friend to stand on one foot next to you, while you lie. Looks bizarre?
- * Throw a ball or a cap or something in the air, and try to catch again.