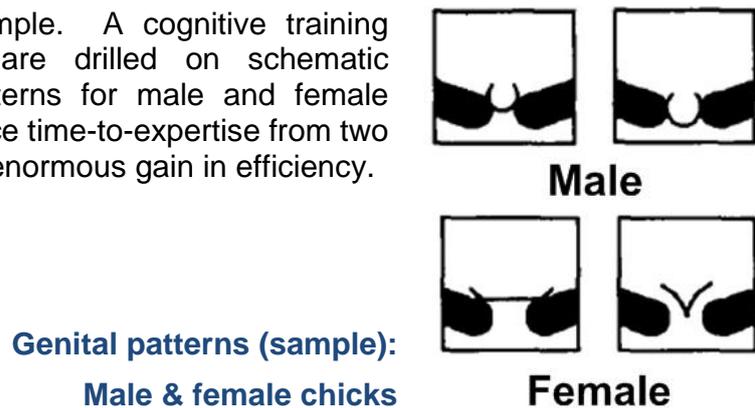


# Cognitive Principles, Cognitive Power

We now have much more evidence about the power of cognitive principles than we did when Dr John Snow was tracking down the source of cholera.

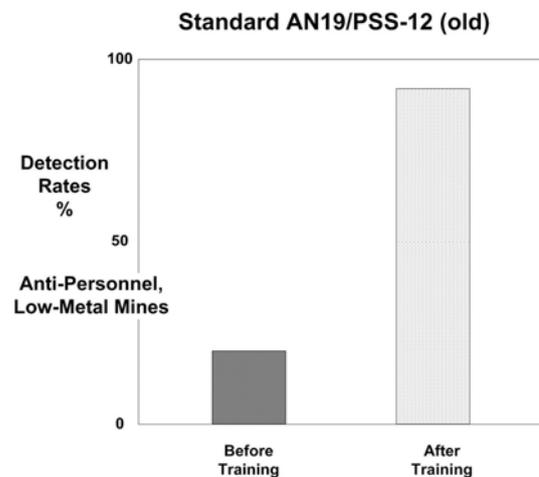
## Chicken sexing

Take chicken sexing for example. A cognitive training program in which trainees are drilled on schematic representations of genital patterns for male and female chicks has been shown to reduce time-to-expertise from two years to three days. That is an enormous gain in efficiency.



## Landmine detection

Take landmine detection as another example. Detection of low-metal types is a real problem. Detection rates run out at about 20%. Particular cognitive strategies can be brought to bear on this problem. They can be taught over a period of about 20 hours. They improve detection rates from 20% to 95%.



Mine detection before & after cognitive training

These gains in efficiency and effectiveness are achieved at trivial, even laughable cost.

Sources:

Biederman, I. & Shiffrar, M. M. (1987). Sexing day-old chicks: A case study and expert systems analysis of a difficult perceptual-learning task. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 13, 640-645.

Staszewski, J. (2004). Models of expertise as blueprints for cognitive engineering: Applications to landmine detection. Proceedings of the 48th Annual Meeting of the Human Factors and Ergonomics Society, 48, 458-462.