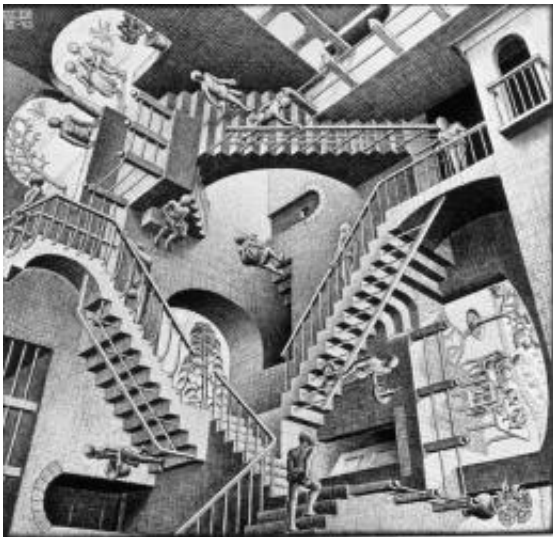


# Study shows some forms of visual reasoning might be inborn

March 30 2011, by Bob Yirka

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Relativity, by M. C. Escher. Lithograph, 1953. Image via Wikipedia.

(PhysOrg.com) -- Italian researcher Girogio Vallortigara of the University of Trento in Italy, and his colleagues have devised an experiment that shows that the ability to view and interpret what is normal and what is not, at least in vertebrates, might be imprinted on our brains before birth.

In a paper in *Biology Letters*, the researchers describe how they placed 66 baby [chickens](#) in a dark chamber immediately after birth to prevent them from forming any sort of visual reasoning abilities, then turned on the lights and presented them with two drawings; one of a cube with an

[M. C. Escher](#) type staircase that could never exist in the real world as it wraps around the object in impossible ways, and the other a normal cube with a normal staircase. Two thirds of the chicks went for the real deal, while presumably the other third either did nothing, or tried out the impossible picture to see if they could climb those stairs and escape from their chamber after all.

The results show that the chicks do have some inborn ability to look at and recognize the difference between something that is visually possible and something that is not; and raises the issue of whether human beings have the same kind of skill. Human babies have been tested, and showed the same results, but not till they were four months old, and most certainly weren't forced to live in the dark all that time, which meant they were able to build up their own ideas of what is real and what isn't by existing and learning in a three dimensional world.

The study also lays open the question of how animals of any species come to understand what is possible and what isn't in the world they inhabit. Other experiments have shown for example, that baby chicks won't walk off the edge of a table, as they seemingly know they can't fly; which begs the question, how did they come to know, and what causes them to change their minds as they grow older and their wings develop?

Once again, more research will be needed to find the ultimate answers to such difficult questions.

**More information:** by Lucia Regolin, Spontaneous discrimination of possible and impossible objects by newly hatched chicks, Published online before print March 23, 2011, [doi:10.1098/rsbl.2011.0051](https://doi.org/10.1098/rsbl.2011.0051)

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