

LEONARDO AND EMBRYOS

[by John H. Lienhard](#)

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Today, an odd parable of birth and human vision. The University of Houston's College of Engineering presents this series about the machines that make our civilization run, and the people whose ingenuity created them.

Here's a drawing by Leonardo da Vinci -- that clear-eyed observer of the world and everything in it. It's one of several cutaway views of a [man and woman engaged in sexual intercourse](#). He hasn't got their interior anatomy right -- not yet. He didn't start dissecting people and animals until later.

The drawing has a chilling detachment -- almost a bathroom wall detachment. But Leonardo is seldom finished when we think he is. His inscrutable Mona Lisa vision reminds us how multilayered the world is, beneath its appearances.

Leonardo worked very hard to let nature speak through his brush without subjective interference. And he'd just started to wrestle with the most basic human function -- with procreation.

A few years later, he made a painting that hasn't survived. But his [study sketches](#) do. We also have descriptions and versions by other artists. It shows Leda and the Swan. Leda, of course, mated with Zeus, who came to her in the form of a swan.

Leonardo's Leda is a naked and sensual Earth Mother. At her feet, plump laughing children emerge from broken swans' eggs. All around, plants, ripe and rich, burst with reproductive power.

Art historian Kenneth Clark believes that one of those cold studies of intercourse was a preliminary sketch for the Leda masterwork. Leonardo the scientist had struggled with the mystery of human reproduction at a deeper level than was obvious.

And he wasn't done yet. In 1512, now 60, Leonardo devoted a whole notebook to embryology. In it he produced the first drawings of a baby in the womb. He dissected oxen and he dissected at least one dead mother with her unborn child.

He takes on complex anatomical questions. How does the child feed and void? What tissues tie the child and the mother? He didn't get everything right. But he laid ground for people like Fabricius, who worked out the details 80 years later.

So we gaze at that [embryo](#), curled up and small. It is human latency, powerfully contained and powerfully expressed. It is an old man's contemplation of the primacy of human life.

Leonardo's unrelenting belief that truth is revealed in nature brought him at last to the ultimate act of human creativity. In an odd way, that tiny human form, curled up in a ball, about to flower into the world, might be one of the most powerful images Leonardo left for us.

And, seeing that child, we know that Leonardo's search for external truth has led, at last, to a far more internal truth. We know that he's reached a truth not only deep within the human body -- but deep within his own psyche as well.

I'm John Lienhard, at the University of Houston, where we're interested in the way inventive minds work.

(Theme music)

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For more on Leonardo and Leda, see [Episode 1183](#).