Art and science have been joined at the hip for centuries. This bond became especially clear during the Renaissance, when artists like Leonardo da Vinci began to study anatomy and science, while producing some of the world’s most memorable images. Human reproduction has been a powerful source of inspiration for artists before, during and since the Renaissance. From prehistoric to modern times, artists have produced images that reflect all aspects of fertility. Venus figures, carved 10,000 to 25,000 years ago, have been found all over the world, from the valleys of Austria to the caves in India. The Egyptians, Greeks and Romans also left behind their own fertility myths and icons. Contemporary and modern artists continue to explore the fields and fences of sex and fertility, and this brief article will take you on a pictorial journey through some of them. I hope that it will also open your eyes to the relative “newness” of our scientific knowledge.

We tend to forget how recently we began to grasp the process of reproduction. Only two lifetimes ago, many people still believed that bacteria and other lower life forms like mice appeared magically, by “spontaneous generation.” This article will show you how rapid, and new, our journey has been, from ignorance to understanding.

One of the earliest and most famous fertility icons, the Venus of Willendorf, was found in the silt of the Danube River (Figure 1).

Carved in limestone, this figure has no feet on which to stand (I suspect she was displayed lying down) and has weight and proportions that suggest nourishment and fertility. A second much larger
relief carving is shown in Figure 2: the *Venus of Laussel*.

Both women have prominent vulvae and breasts; the *Laussel* figure holds a horn with 13 notches carved into it. These might represent the number of moons or menstrual cycles in one year.

Moving quickly forward in time to the ancient Greeks, reproduction was a huge focus for their myths and images. Zeus, the king of all gods, was a central and promiscuous figure in many of these tales. Figure 3 shows the birth of Athena.

You’ll note that she emerges from Zeus’s head, the result of him eating her pregnant mother! Zeus had sex with Metis, a Titan of great wisdom, and when Zeus heard that her offspring might become greater than himself, he ate Metis and her unborn child. Metis’ wisdom somehow allowed her to gestate in Zeus’s head, from whence Athena, their daughter, was ultimately born. Just prior to the birth, Zeus’ headache grew so bad that he called Hephaestus to split open his skull with an axe: the primordial “splitting headache.”

The story of Asclepius, the god of medicine, is another interesting one. The god Apollo fell for Coronis, a nymph. Gods were allowed to couple with all sorts, but a nymph was supposed to remain faithful to her god and lover. When Apollo heard that Coronis had consorted with a mere mortal, he killed her with a flaming arrow, but took pity on her unborn child, ripping him from her belly in perhaps the first caesarean birth (Figure 4).

The baby Asclepius became the god of medicine and went on to father a host of medical children, including Hygeia and Panacea.

Julius Caesar was also supposedly delivered by caesarean section, hence the name used today for surgical delivery (Figure 5).
However, Caesar’s mother Aurelia lived to the age of 50, suggesting that she delivered the little chap vaginally (at that time, caesareans were only done in an attempt to save a fetus at, or just after a mother’s death).

Fast forward now to the Renaissance, when 15th century painters like Sandro Botticelli illuminated classical themes. Figure 6 shows perhaps his most famous painting, Nascita di Venere.

Housed in the Uffizi Gallery in Florence, this gorgeous painting shows Aphrodite (Venus to the Romans) arising from the sea’s foam. Two young lovers blow her ashore, while Horae, the goddess of the seasons, cloaks her in flowers. Aphrodite/Venus is, of course, the goddess of beauty and love.

Another fertile moment, depicted in one more of the Uffizi’s great paintings, is the Annunciation (Figure 7).

Da Vinci wrote at the top of the drawing, “I expose to men the origin of their first and perhaps second reason for existing.” Sex provides the spark of life and perhaps the motivation for living. He may have had human psychology down pat, but his anatomy on this occasion was far from accurate: a non-existent vessel is drawn between the woman’s nipples and uterus. For the man, there is the suggestion that semen comes from brain via the spinal cord, rather than the testicles. This was a resurgence of Greek thinking – the idea that sperm comes from the brain can be traced back to Pythagoras, in the 6th century BC. Another magical da Vinci drawing is shown in Figure 9, Studies of Embryos.

Although Florence was the cultural center of the Renaissance, art and science leapt forward in other European countries at that time. The Arnolfini Portrait is an oil painting by the Dutch artist Jan van Eyck (Figure 10). It is housed in London’s National Gallery and is one of the most famous and earliest panel paintings made with oil rather than egg tempera.

Towards the end of the Renaissance,
reproductive science made some great strides. William Harvey, the man who first accurately demonstrated the function of the heart and circulation, was perhaps the first to suggest that “everything comes from an egg” (Figure 11).

He didn’t understand exactly how it happened, but he was sure that the egg was the root of all life. Others believe that semen was the true source of life. “Ovists” like Harvey and “Spermists” would argue for centuries about who was correct. The Ovists thought of sperm as parasitic worms, while the Spermists considered the egg to be food for the sperm! Of course, neither and both were right. Sexual reproduction is the result of fusion of gametes, to produce a new and unique being. This wasn’t fully understood until research from Cambridge began to unravel the nature of DNA 300 years later in the mid 1950s.

Shifting gears now, here is a brief look at Modern art as it relates to sex and reproduction. For me, the work of Édouard Manet was pivotal in the move away from a conventional, classical style to a more free and varied approach. Manet
Figure 7. Leonardo da Vinci’s *The Annunciation*: Mary meets Gabriel.

Figure 8. Da Vinci’s *Coition of a Hemisected Man and Woman*, a drawing from 1492.

Figure 9. Da Vinci’s *Studies of Embryos*
was one of the first great artists to be recognized in the Salon des Refusés. In his work, modern sexuality begins to rear its head, and with *Olympia*, Manet paraphrased Titian’s famous Venus of Urbino, triggering a storm of protest (Figure 12).

When first shown in 1865, security guards had to protect this radical and pornographic work from vandalism. Thankfully, *Olympia* can now be seen in the entrance of the Musée d’Orsay in Paris. Again, this wonderful painting (and the rest of the d’Orsay collection) is worth the trip to Paris.

Manet opened the door to the Impressionists who followed. Berthe Morisot was one of three great women members of this movement, and in Figure 13 perhaps her most famous painting is shown, *The Cradle*.

There are too many other modern images that relate to fertility to make an inclusive list. Here though, are a few samples. First, Gustav Klimt, the famous Austrian painter and confere of Sigmund...
Freud, who was obsessed with sex and death. Both themes are present in *The Three Ages of Woman*, housed in the Galleria Nazionale d’Arte Moderna in Rome (Figure 14).

Frida Kahlo, a Mexican from the early 1900s said that her paintings represented her reality, not her dreams. They focus on sex, birth and death, and this one depicts one of several miscarriages (Figure 15).

Ron Mueck is next. An Australian living in London, he constructs monumental figures from fiberglass and latex. Here is his eight-foot high *Pregnant Woman* (Figure 16) and his three-foot long depiction of a woman and her newborn (Figure 17).

We have a massive baby’s head by Mueck in our own National Gallery – sadly, not worth the trip to Ottawa in my opinion.

If you have time, go online and see the YouTube video of Mueck making *Pregnant Woman*. It is fascinating to see him at work.

Art and science may seem to be at opposite ends of life’s spectrum, but they are in fact inextricably linked. They are both forms of understanding.
communication and knowledge. As Marcel Proust said: “Thanks to art, instead of seeing a single world, our own, we see it multiply until we have before us as many worlds as there are original artists.” When it comes to reproduction, we are blessed with great science and great art.

**About the author**

Ed Hughes is a fertility clinician-scientist-teacher at McMaster University and ONE Fertility, in Hamilton, Ontario. Ed was a founding editor of the Cochrane Collaboration’s sub-fertility module and is currently an Associate Editor for *Human Reproduction*. His clinical research focuses on treatment effectiveness but, more recently, he has published on the use of visual images in caring for fertility patients. This research-departure stems from Ed’s passion as a painter – he’s been making pictures all his life. Above is a recent example of his artwork.