

Gleaning New Perspectives by Measuring Body Proportions in Art

By **STEPHEN HEYMAN** MAY 27, 2015

How has our perception of the ideal female form changed over time?

In a new paper published on the open-access journal PlosOne, Jeanne Bovet and Michel Raymond of the Institute of Evolutionary Sciences in Montpellier, France, analyzed more than 200 depictions of feminine beauty in Western art from antiquity to the present. They focused on figures from mythology or the Bible — Aphrodite, the Roman Graces, Susanna from the Book of Daniel — who have been idealized by successive generations of artists, and looked to see how the appearance of these women has changed over time.

To track that, the researchers compared the circumference of each subject's waist with that of her hips. This "waist-hip ratio," or WHR, is an important concept in evolutionary biology. Previous studies have shown that the male preference for women with an hourglass figure may be based on an impulse to seek out a mate with a waist-hip ratio of around 0.7, which correlates with positive traits like fertility and better general health.

But measuring the hips and waist of a two-dimensional Venus — whether asleep à la Giorgione or emerging from a half-shell à la Botticelli — was practically impossible. So the researchers hired a team of more than 2,000 online assistants to code each painting, estimating the waist-hip ratio by selecting which body type the woman in the painting most closely resembled from a gallery of silhouettes. Their sample included goddesses of all shapes and sizes — from the corpulent Venuses of Rubens and Van Dyck to varieties by Gustav Klimt and Jean-Léon Gérôme with small waists and wide, curvaceous hips.

Despite these extreme cases, Ms. Bovet said that over the 2,500-year period

the average WHR never exited “the fertile range” (from 0.67 to 0.80). That is not to say the average remained constant. It hovered around 0.74 during antiquity before beginning a long, slow descent from the Renaissance to the 20th century. (The average WHR from about 400 to 1400 A.D. is unknown, as there were scant depictions of nude women in medieval Western art.)

“Contrary to the idea that there is only one perfect waist-hip ratio which is universal, we saw some significant variation,” Ms. Bovet said. “And this variation is not new. It started in the 15th century, long before the occurrence of mass media and its ability to influence fashion.”

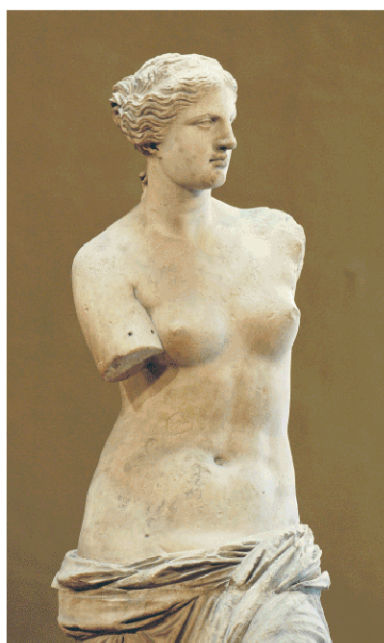
Previous studies examined how the WHR evolved over shorter windows of time, using as research samples the measurements of models from Playboy magazine or contestants from beauty pageants. “That only gives you about 50 years of data,” Ms. Bovet said. “We wanted to do a systematic treatment over a much longer span.”

0.76

WAIST-HIP RATIO

0.80

0.66



*Anonymous, 130-100 B.C.
Venus de Milo*



*Anthony Van Dyck, circa 1630
Venus Asks Vulcan to Cast
Arms for Her Son Aeneas*



*Jean-Léon Gérôme, 1890
The Birth of Venus*

Sources: Centre National de la Recherche Scientifique, Institut des Sciences de l'Évolution de Montpellier

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