

# Symmetry inspired by architecture

**Kamal Boullata uses the Fibonacci series of numbers and ancient Islamic architecture as elements of his work**

Arab artist Kamal Boullata was born in Occupied Jerusalem in 1942, but has lived in exile in America and Europe since he was 18. Despite his Western art education, he has kept in touch with his roots by doing extensive research on Islamic and Modern Arab art, and has written several essays and books on Islamic, Byzantine and Palestinian art. His latest body of work, Bilqis, named after the queen of Sheba, seamlessly combines Western and Islamic abstraction. The series, comprising five triptychs is inspired by the Quranic legend of the queen's visit to the court of King Solomon, where she mistook the glass floor for a sheet of water and lifted up her skirt to avoid getting it wet. The paintings are essentially about recreating the transparency and spatial ambiguity in visual perception that the queen had experienced.

We spoke to the artist about the conception and creation of this series. Excerpts:

Why is this story about Bilqis so inspiring for you?

This story is significant because it inspired qualities of beauty that were to become a cornerstone in Arab and Islamic aesthetics. According to the story, Bilqis was so amazed at how her own eyes had betrayed her that the pagan queen readily embraced the king's monotheistic belief. The legend influenced Islamic rulers to incorporate glass floors, water fountains and glazed ceramic walls in the construction of their palaces, so that the interiors glowed with transparencies and reflections that created spatial ambiguity. Externally too, Islamic monuments were built beside pools of water in which they were reflected, as can be seen in the Al Hambra palace and the Taj Mahal. Interestingly the symmetry of these buildings and their reflection in water produced the four fold symmetries you see in arabesques. Thus symmetries and spatial ambiguity in visual perception fostered the evolution of geometric abstraction in Islamic art. But even in pre-Islamic times, the marble floors of churches, such as the Hagia Sophia, were highly polished to create the impression of wet floors, so that the faithful could connect with the legend of Christ's miracle of walking on water. The story of Bilqis inspired me to explore how art becomes an expression of faith, and how the aesthetics of art reflect the spiritual dimension.

Why did you want to use the Fibonacci sequence in this series?

The mathematical principle behind this series originated in India in the 6th century, and further evolved in Baghdad in the 10th century. It was taken to Europe by Leonardo Fibonacci, an Italian trader, who wrote about it in a book published in 1202. This sequence is based on the generation of numbers in a certain order whereby each number is the sum of the previous two numbers. In the Fibonacci sequence, the ratio of a whole figure to its larger part is the same as the ratio of the larger part to its smaller part. This can be seen in nature in the horns of rams and reindeers, the spirals of shells and the arrangement of pine cones or the leaves of an artichoke. But interestingly, this numbering progression is also embedded in the radial

arabesques on the interior of the Dome of the Rock, built in 691, and is in fact reflected in most arabesques. My research in Morocco and Spain showed that arabesques based on a matrix of two overlapping squares within a circle (also seen in the ground plan of the Dome of the Rock) are similar to patterns found in Byzantine icons. And these later inspired European artists to experiment with abstraction. Thus my use of this mathematical principle in my work makes me feel close to the arts of the world I live in as well as to the world I come from.

How did you incorporate the mathematical formula in your paintings?

Like traditional artisans, who used pencil, ruler and compass to plot their arabesques on paper, I created the skeletal structure of my compositions on gridded paper. The Fibonacci numbering sequence is reflected in the distance between the vertical lines in my sketches, with the linear pattern echoing the movement of waves. These are intersected by diagonal lines that bring some chaos to the order. The geometric shapes generated by the intersection of the lines surge out of the same plane creating a sense of spatial ambiguity. And the linear structure has been duplicated, rotated and extended horizontally in each triptych to create the perception of mirror-like symmetry. The transparent layers of free flowing brush strokes between the sharp-edged lines generate a sense of movement and flashes of light. The illusion of symmetry and refraction of light is reminiscent of the ambiguities of geometric arabesques, and recalls Bilqis's experience on the glass floor. There are several layers of colour beneath what you see on the surface. I stop painting only when all the colours feel as fresh as spring water and as clear as glass and I sense that I could plunge through the painting as in a pool. I want to invite viewers to plunge in and explore the depth below the surface.

Can one relate to these works without knowing the story of Bilqis or the underlying connection to mathematics and art history?

For me the journey is more important than the message. Because of the research I have done, where the work is coming from is more important to me than where it is leading to. But for viewers, knowing the legend of Bilqis or its connection to Islamic art is irrelevant. The only important thing is how they react to it. If they find some beauty in it and enjoy the visual effect, that is enough. But if they do know the background, it will open up their mind and enable them to have a deeper understanding. I would be happy if after seeing my work, a viewer looks differently at the flooring in a Mosque, or church or even a hotel.

Bilqis will run at Meem Gallery until July 31.