



opposite  
**Islamic mirror, 2008**  
 Stainless steel, 249.6 cm diameter  
 Installation view, Sala Sharq al-Andalus of the Monastery of Santa Clara, Murcia, 2008  
 Courtesy the artist  
 Photograph José Luis Montero

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**Svayambh, 2007**  
 Wax and oil-based paint, dimensions variable  
 Installation view, Royal Academy of Arts, London, 2009  
 Courtesy the artist  
 Photograph Dave Morgan

TO CLOSE THE 'MONUMENTA' INSTALLATION at the Grand Palais in 2011, the legendary DJ Richie Hawtin, a long-time admirer of Anish Kapoor's work, was invited to perform a concert. Kapoor's *Leviathan*, 2011, filled the space, a glove-like PVC membrane elastically animating both its inside and outside within the vast metal-and-glass building. Hawtin's sound reverberated and impacted on both it and the people gathered there. His concert was concerned with placing sounds within the physical space and for a period of time the physical and the ephemeral coexisted.

In an interview with Hawtin at the time, Kapoor made his relationship to performance quite explicit. 'I see', he said, 'sculpture is a performative art ... it requires the viewer to perform.'<sup>1</sup> The wax canon of *Shooting into the corner*, 2008/09, and the wax trains, *Svayambh*, 2007, acknowledge that his work is often also performative in the act of making. At another point in the conversation with Hawtin, Kapoor reflected on the relationship between sound and form: 'many of the pieces have sonic qualities – with convex forms the sound bounces off. Concave forms concentrate sound.'<sup>2</sup>

#### Islamic mirror

(a) member stands up and throws – from a basket he's clutching under one arm – what appears to be a small shiny piece of metal out in front of him, even further towards the already spatially-invaded audience. It drops and pierces the soft cloud of toil and heartbreak with its high ringing that seems to hang there long after the sound of it has died. On closer inspection, it's hexagonal.<sup>3</sup>

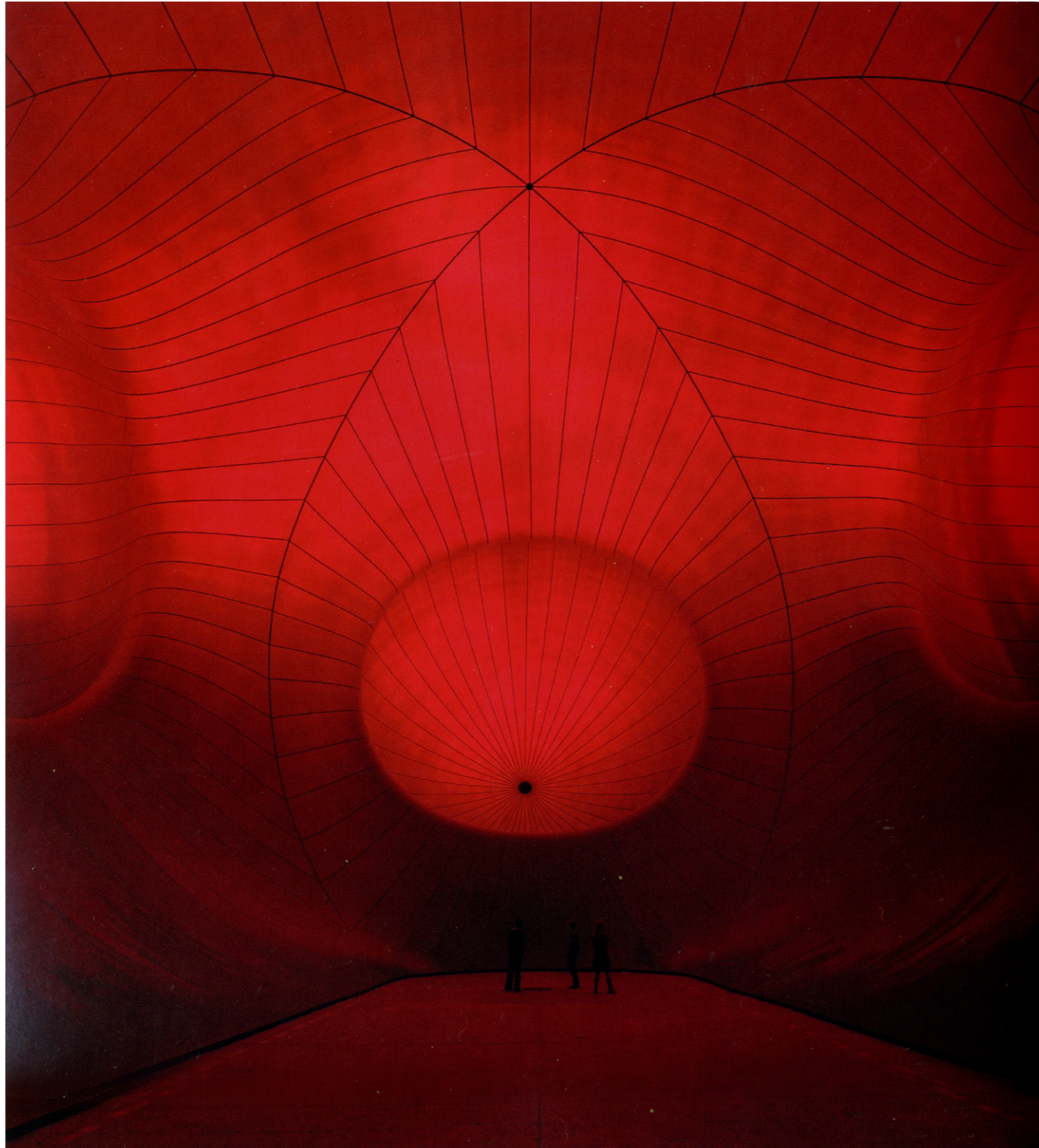
The hexagons are mirror-polished stainless steel, each slightly different in size. They are by-products of the production of an ongoing group of works by Kapoor that began in 2007. Kapoor's starting point was simple and yet inherently complex and contradictory. If the reflection in a concave mirror appears upside

down to someone standing a few metres from the dish, what would happen if the dish were made of perfectly fitting flat hexagonal pieces? A flat mirror should reflect, while the optics of the concave form should invert. In theory, the answer to the question is an inverted image with any point of focus appearing the right way up. It seemed impossible. It had to be made.

First the geometry had to be calculated so that each hexagon on the surface of the section of a sphere touched its six neighbours perfectly. Perfect electro-buffered mirror-polished stainless steel sheet was sourced from Japan. Each hexagon was laser cut and numbered. A positive 'former' was precision milled in England. The assembly of the hexagons was done in Spain.

The final result is mesmerising. It conjures up a mass of images both natural and artificial – a fly's eye or a perfectly cut diamond, a dazzling satellite dish or frozen snowflakes. It draws you in and forces you to move. It holds your attention and transforms the accepted relationship between viewer and artwork; these works do not require passive reflection, they demand an active engagement. They initiate a performance in which you play a part as you look. As predicted, the world is upside down but wherever you look it is the right way up. What could not be predicted were the work's acoustic qualities. It both focuses and fragments sound. Experiments followed with different sized shapes. The experiments are ongoing. Remarkable and unpredictable things still happen.

In 2008 the composer and musician Nathaniel Mann was fascinated by the thousands of rejected pieces from Kapoor's work that were accumulating in boxes around the workshop. He was also intrigued by the acoustic qualities of the works themselves, and with Kapoor's approval set out to produce a sound piece which aurally emulated *Islamic mirror*, 2008, a concave form made from thousands of octagons and squares. The original idea was that this 'soundtrack' would accompany an exhibition by Kapoor at Sala Sharq al-Andalus in Murcia, a Moorish palace that was transformed



Leviathan, 2011  
PVC, 33.6 × 99.89 × 72.23 m  
Installation view, 'Monumenta' (2011), Grand Palais, Paris  
Courtesy the artist and 'Monumenta' (2011), French Ministry  
for Culture and Communication  
Photograph Dave Morgan

into the Monastery of Santa Clara and now serves as a museum.

#### Transforming a sculpture into an acoustic transducer

By attaching a piezoelectric sensor to the back of the concave dish, the entire sculpture was transformed into an acoustic transducer. An audible feedback loop was induced by amplifying the signal of the dish's structure-born audio, as captured by the piezoelectric sensor, and outputting it to a loudspeaker placed nearby. Specific feedback resonances are the result of the inherent formant frequencies of the dish's structure. By passing the loudspeaker across the surface of the sculpture, the dish's resonant frequencies are revealed through the fluctuating tone of the feedback loop.

Because each hexagon, octagon and square is minutely different in size its resonating frequency differs. When the stainless steel shapes are struck/excited against a surface in quick succession it creates a complex cascade of shimmering tones quite unlike any traditional instrument.

In an adaptation of composer Alvin Lucier's *I Am Sitting in a Room* (1969) experiment the peculiar reflective acoustic qualities of the dish's surfaces were used to sculpt audio recordings. The recorded sound of the cascading hexagons was reproduced via a directional loudspeaker, bounced across the surface of the dish and then recaptured by a microphone. The resultant recording was then played back into the dish through the loudspeaker and rerecorded. This process was repeated over and over again with each new audio recording, until the original was completely replaced by the pure resonant harmonies and tones of the dish itself.

These sounds became site specific as the resonant harmonies were in turn shaped by Mann for the space in Murcia. During the exhibition Kapoor's *Islamic mirror* was installed on a wall in the old Moorish palace, facing a pond with a fountain providing the continuous sound of running water. In response, Mann's sounds developed a reflective perspective inspired by the writings of the poet and Sufi mystic Ibn

Arabi (1165–1240). The key reference was the sound of water. In his mystical writing Ibn Arabi uses metaphors of water to represent the unity of God, the universe and mankind – the oneness of the many and the oneness of the one. The reflected/composite/subjective selves made physical in Kapoor's dish were then made aural through the abstracted harmonies of the concave sculpture.

The result was a viscerally powerful experience – so powerful that the exhibition's curator, Rosa Martinez, decided not to use it in Murcia, preferring the stillness of the space and the sound of the water. The sound of the flood of cascading platonic shapes produced moments of true anxiety and disquiet as if the dish itself was anticipating its own destruction as it heard the repeated sounds of falling individuals. In an implicit acknowledgment that this anxiety needed to be balanced, Mann sculpted the inevitable and inescapable cycle. He filtered the recording of the falling hexagons back through the dish until the edge of despair was tempered by a sweeter tone that appeared to contain a phrase pondered over by Ibn Arabi: 'I was a hidden treasure and I wanted to be known, so I created the world so I could be known.'

Kapoor is a profoundly emotional artist. He produces active and dynamic objects that physically contain this emotion. Nathaniel Mann's sculpted sound focused, shaped and released the emotional resonance embedded within *Islamic mirror*.

Anish Kapoor, Museum of Contemporary Art, Sydney,  
20 December 2012 – 1 April 2013.



1 The Creator's Project, 'Richie Hawtin & Anish Kapoor: France', at <http://www.thecreatorsproject.com/videos/richie-hawtin-anish-kapoor#oid=111MmhwMjpaVMkBtn7DP R8SuSt5G8-y3>.

2 ibid.

3 See Mason Le Long, 'dontmovemusic', <http://devonsproule.tumblr.com/post/1215968035/dontmovemusic-something-for-the-weekend-well>, 2010, in response to a performance by Dead Rat Orchestra using stainless-steel hexagons from a group of works by Anish Kapoor. For many years sound artist Nathaniel Mann and Dead Rat Orchestra have been using Kapoor's rejected hexagons in their site-specific performances.