

## Moiré II

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### Abstract

My main interest as an artist is the optical phenomenon moiré. Other artists such as photographers or cameramen desperately try to avoid this phenomenon. I however consider it my mission to show the public the beauty of moiré. Moiré is generally considered to be an error in the design or picture. Yet there are few artist who use it in their art. While I was working with this phenomenon I discovered that the Hungarian artist Vasarely had been working with moiré too. His “Cinetiques” inspired me to continue my work with the moiré phenomenon. The following is not scientific. My intention is to give you some insight in my designs and methods of creating moiré images.

### A contradiction

I have to contradict myself. In the abstract I spoke of me designing moirés. Over the years I have learned and experienced that it is almost impossible to design a moiré. A moiré designs itself, with the help of its designer. The designer delivers the tools that are necessary to allow the phenomenon to appear. I provide the transparant paper, the white paper, some ink or the computer and some lines or concentric circles. I set up these lines and circles in such a fashion that the phenomenon is able to appear. How it appears is totally up to the phenomenon itself. I have no influence on the result. Of course I can predict what the outcome might be, but I can not influence the outcome of the pattern. Believe me, I have tried. At the risk of considering myself useless in this matter, I will first show an example of a line pattern moiré and a circle moiré.

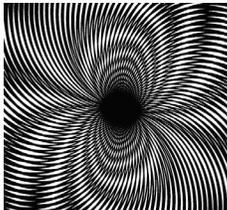


Image 1. Line pattern

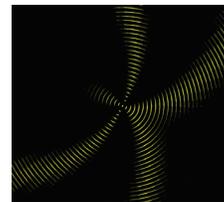


Image 2. Circle pattern

Line patterns often show a ‘butterfly’ like moire. Circle patterns often show a ‘spider’ like moiré. Both moiré patterns can be predicted. It is however almost impossible to predict how the moiré shows itself between the lines or circles.

### Old and new designs

Earlier designs that I made show that it was important to me to let the overlapping lines that caused the moiré to appear, disappear as much as was possible. (Image 3 and image 4) The reason for that was that

I wasn't interested in seeing lines. I didn't think it would be interesting. Showing the phenomenon up close, however was my biggest goal at that time.

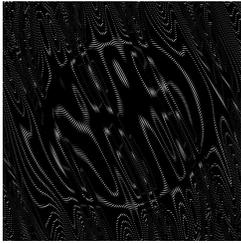


Image 3 "open"

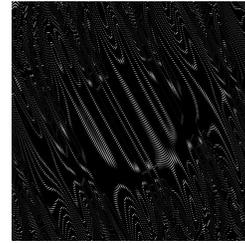


Image 4 "closing"

I produced a large number of these patterns. After a year or so, I thought it was time for a different approach. The moirés I had produced were mostly beautiful to me, but they were all very thick and dark. The spaces between the lines were small enough to hide them in the overall picture. But I wanted to make the phenomenon more lively, like in image 1. In order to achieve this it was necessary to design thinner lines. The distance between the lines had to be bigger too.

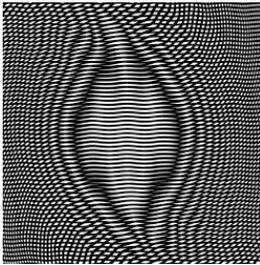


Image 5 "nr.4"

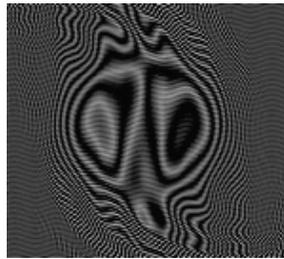


Image 6 "nr.7"

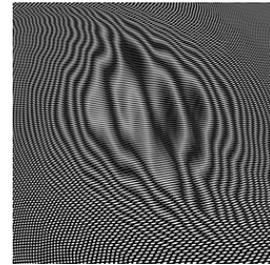


Image 7 "nr.11"

The first results were very promising. Thinner lines had produced much clearer and open moirés. But more important! These designs allow the viewer to get a clearer picture as to what is going on within the image! The images are more inviting to explore than the designs with thicker lines

### The use of colour

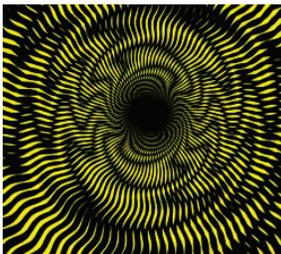


Image 8 "yellow 1"

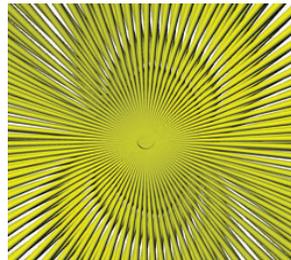


Image 9 "yellow 2"

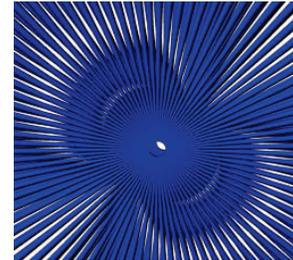


Image 10 "blue"

I have always found the use of colour in my designs difficult. The moiré effect is still visible, but colour does not add a new dimension to the image. Except for image 8, where I have used a yellow

background. In a way this is more exciting to look at, depending on the design. I have used this method several times while making animations on this subject (as shown at the Bridges conference of 2008). Images 9 and 10 show what adding colour does to the effect. Nothing. So I left it out for a while.

### Reflective lines

After some time it began to bother me that I still had not found a way to make colour work for my moiré designs. If colour does not work why not make the lines reflective. Reflective objects reflect what is around them. So I designed a colourfull surrounding in which the reflective lines were set up.

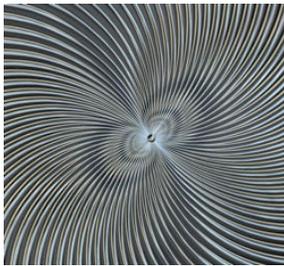


Image 11 “nr. 80”

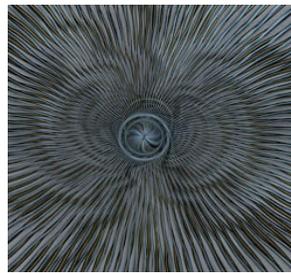


Image 12 “nr. 112”



Image 13 “nr 144”

I was surprised and stunned. The moiré effect remained visible. The colours interacted perfectly with the lines and the effect. These factors gave a new dimension to the image. Resulting in warmer and deeper images. I had given myself, as a viewer, a more complete picture than I had managed to do before!



Image 14 “nr 157”

### References

- [1] A. M. F. Wegdam, O. Podzimek and S. Zijlstra, *Projecting moiré fringe pattern prediction using the optical transfer function*, *Applied Optics* **30**, Issue 13. 1991
- [2] I. Amidror, *The Theory of the Moiré Phenomenon*, Kluwer, Dordrecht, The Netherlands, 2000