Homages to Geraldo de Barros

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Abstract

In the vanguard of Brazilian art, Geraldo de Barros (1923-1998) was a painter, photographer and designer as well. His work was a precursor to concrete art. De Barros was also a pioneer in abstract photography. I happened upon his painting "Diagonal Function" (1952), where he cut out ¼ of a black square and found it quite elegant and worthy of further investigation. Here I present some of the possibilities for symmetry transformations and color dispersal in simple geometric systems. The regular interval of scale change juxtaposed with an asymmetrical arrangement of three ¾ squares of exponentially diminishing edge length results in a kind of inverse, fractal-like design that leads, at least in theory, to infinity.

Introduction

In 2007 the work "Diagonal Function" was shown in New York City in an exhibition of Latin American Art at New York University: The Geometry of Hope [1]. The author of this work, Geraldo de Barros was influenced by Gestalt theory, which investigates our perception of incomplete forms in reference to the whole. By cutting out objects from their graphic context de Barros transformed ordinary moments into geometrical structures.

Building Homages

I decided to perform a few symmetry operations on this small but powerful graphic image. Geraldo's original image [2] is shown to the left in Figure 1. The second drawing in Figure 1 derives from the original to its left by removing the outermost four black right triangles and doubling the size of the remainder. In the third drawing the three ¾ squares have been rotated clockwise one hundred thirty-five degrees. Finally this third image is used to create the image on the right, which contains four groups of three ¾ squares, each in one of four orientations, meeting in the middle for a total of twelve ¾ squares.

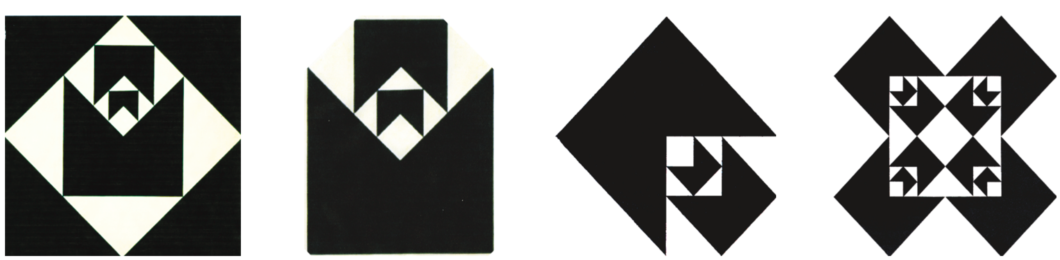

Figure 1: *Extraction and Rotation of the ¾ squares.*

Notice that in the arrangement of the three ¾ squares the largest is not adjacent to the next largest. In fact the largest is separated from the next largest by the interjection of the smallest.

This inverted fractal-like progression of smaller and smaller ¾ squares constitutes a series of self-similar objects, suggesting an infinite series that can continue indefinitely, or at least to the limit of one's drawing instruments.

Figure 2 shows twelve groups of three ¾ squares. Each group is enclosed, or contained within a white square, which itself is enclosed within a black square, as in the "Diagonal Function". This group of three ¾ squares is translated both vertically and horizontally.

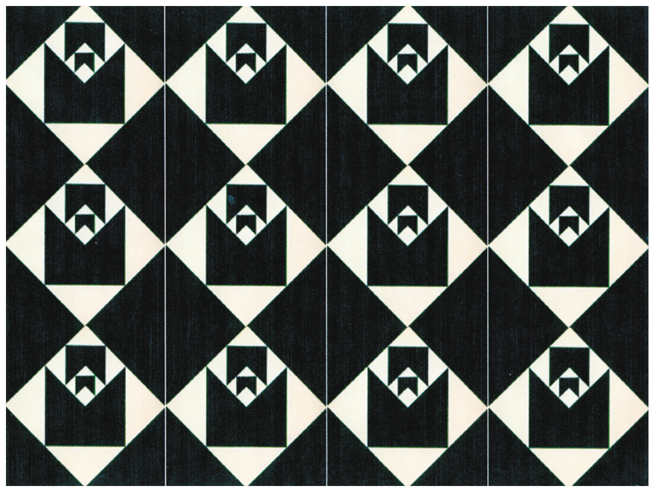

Figure 2: *Vertical/horizontal translations of ¾ squares.*

Next I made a negative version of the ¾ squares, with the black shapes white and the white shapes black. Both versions are shown below in Figure 3.

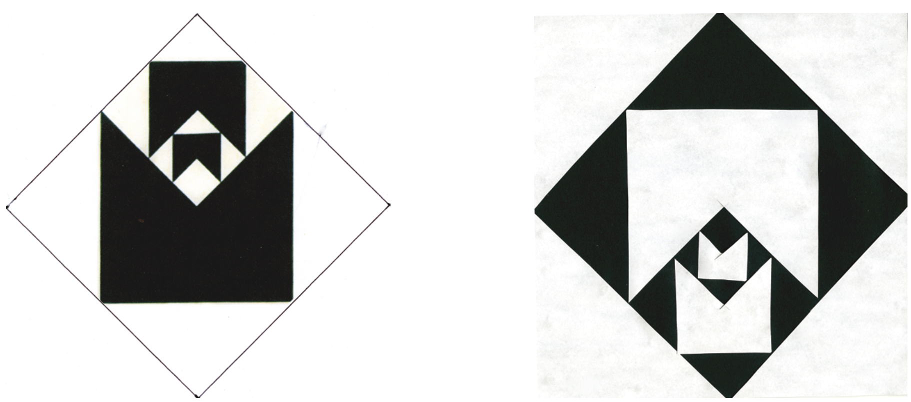

Figure 3: *Positive and negative version of the ¾ squares.*

I printed several of each of these, cut them out and nested them, alternating the positive and negative versions to form the construction in Figure 4 below.

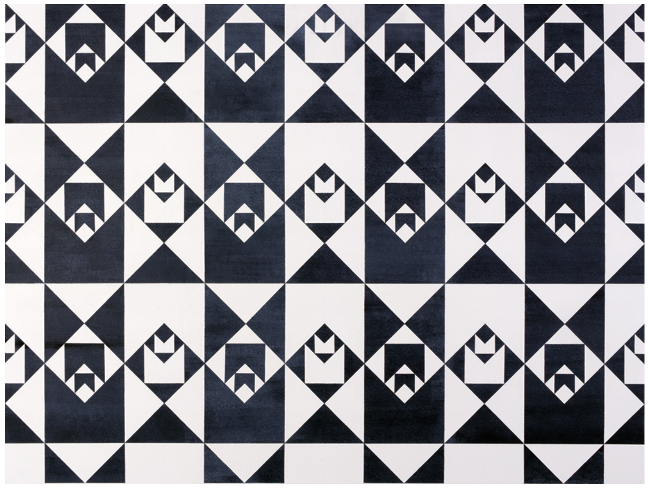

Figure 4: *Alternating rows of positive and negative groups of ¾ squares.*

Next I performed a geometric movement on the four groups of three ¾ squares in Figure 1, translating the group to the right, then downward, then to the left and finally back up again to produce thirty-six new ¾ squares for a total of forty-eight ¾ squares.

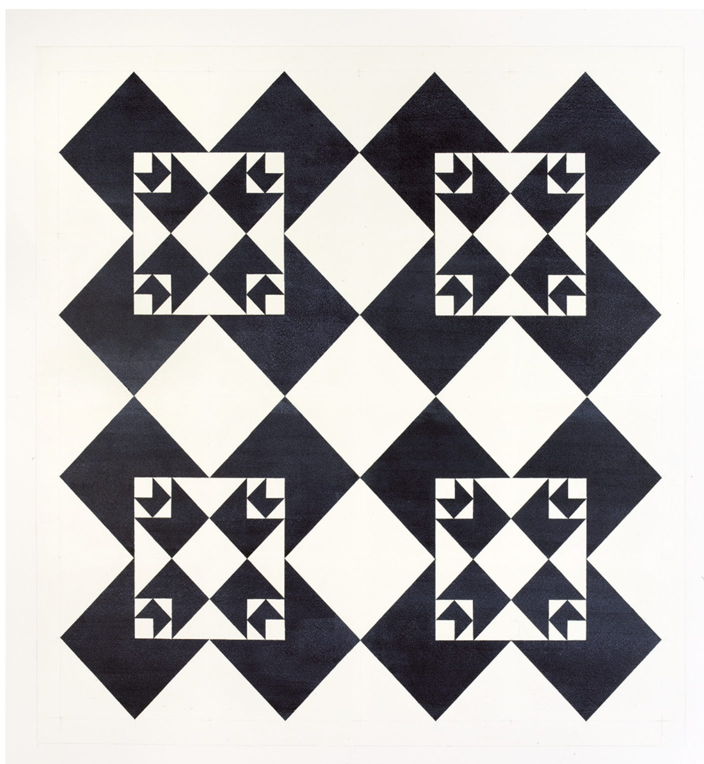

Figure 5: *Translation of the ¾ squares groups.*

From these collages I made four paintings, including Chrome 206 shown below in Figure 6.

Figure 6: *Chrome 206.*

Note that the colors in Chrome 206 are dispersed (arranged) so that there is no next-of-nearest-neighbor color repetition. To view a version in color please see the CD of the conference proceedings or the artwork at the artist's website [3]. Chrome 206 exhibits six iterations of the ¾ squares. Therefore there are twenty-four times four or ninety-six ¾ squares in all. The color scheme is based on the spectrum of colors. The primary series is arranged by size starting with RO (the largest) and ending with RV (the smallest): RO = Red-Orange; YO = Yellow-Orange; YG = Yellow-Green; BG = Blue-Green; BV = Blue-Violet; RV = Red-Violet. The other series (YO, YG, BG) are staggered, i.e., they begin with a different color but then follow the same spectral sequence of colors: (YO, YG, BG, BV, RV, RO); (YG, BG, BV, RV, RO, YO); (BG, BV, RV, RO, YO, YG).

References

[1] Cr 206 Homage to de Barros IV: Rotation, Translation, Reflection. 2013.
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[2] *Função diagonal,* [Diagonal Function], 1952. Geraldo de Barros.
https://www.artnexus.com/PressReleases_View.aspx?DocumentID=18123 (accessed 04/08/14)

[3] Grey Art Gallery [New York University]. NYC, NY.
http://www.nyu.edu/greyart/exhibits/cisneros/cisneroshome.html (accessed 04/08/14)