

A scientific view of *Carefully Constructed*

Joan Snitzer's *Carefully Constructed* brings together a large-scale checkerboard arrangement of square paintings, called *Graphic Phonemes*, and crossword-like collages on paper, called *Unfinished Sentences*. When we visited her studio, she experimented with arranging the paintings to match the structure of one of the collages. As she moved them around on the studio floor, we all noticed that each panel's lightness or darkness (what vision scientists call luminance) mattered more than its hue in creating a convincing match.

This observation echoes a central finding in vision science. Across studies of object recognition and reading, researchers have shown that our visual system relies primarily on luminance contrast to recognize faces, letters, and shapes, and only secondarily on color. The neuroscientist Margaret Livingstone famously illustrated this using a painting by Matisse that depicts a face using the "wrong" hues but the "correct" luminance. Despite the altered colors, the image remains immediately recognizable, demonstrating how strongly our perception depends on light-dark structure rather than color alone.

This principle also shows up in reading. Vision scientist Gordon Legge demonstrated that when letters have sufficient luminance contrast against their background, adding color has little effect on readability. When luminance contrast is removed, reading becomes markedly slower and more effortful, even when the color differences are perfectly distinct. A familiar example: black text on white is easy to read at a glance, while brightly colored text is not. This is because color vision senses light through three photopigments, which absorb different bands of light. The three bands overlap greatly, which limits the contrast between pigments. Luminance contrast has no such limit, so it's typically much higher than color contrast.

Beyond the tones of individual squares, the grid itself shapes perception. In both *Graphic Phonemes* and *Unfinished Sentences*, the grid acts as a powerful visual mask. Although the squares do not physically block one another, their arrangement limits how much you can see in each square. Try it: Roll a piece of paper into a tube and look through it so that only one square is visible. Then remove the tube and view the image normally. You'll see less in the square when it's embedded in the grid.

Artists and scientists have explored this phenomenon. Vision scientists Leon Harmon and Bela Julesz imposed a coarse grid on a portrait of Abraham Lincoln. Viewed from near, each block reads as an independent mark and the face looks flat. From afar, the blocks fuse into a three-dimensional face. Vision scientist Denis Pelli found that viewers could perceive three-dimensional facial shapes in grid-based paintings only when the individual squares were small enough. Size changes what we see. Taken together, these effects invite the viewer to shift between different modes of looking, often described as global versus local attention. From a distance, Snitzer's works resolve into larger organizing shapes, acting like an array of portals. From up close, they reveal fine-grained textures and subtle tonal variations within each square. Psychology research suggests that the ability to move fluidly between

these modes is a hallmark of skilled visual engagement. For example, Rebecca Chamberlain, Professor of Psychology and Neuroscience at Goldsmiths, University of London, has shown that expert drawing involves frequent switching between attention to the overall structure and attention to local detail. You can experiment with this shift yourself by deliberately focusing on a single element of a scene and then expanding your attention to take in the whole composition. How does this back-and-forth movement change what you notice?

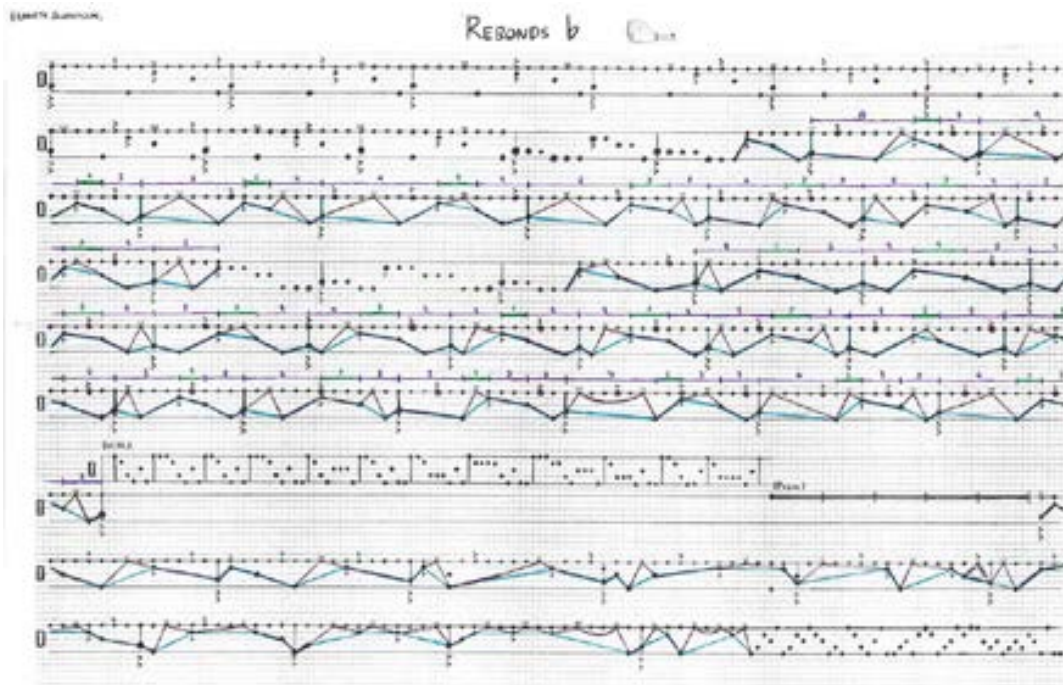
Snitzer's practice—its modularity, reconfiguration, and refusal to settle into a single fixed composition—makes these perceptual dynamics visible.

Anna Bruns, PhD Candidate Cognition & Perception, NYU

Denis Pelli, Professor of Psychology and Neural Science, NYU

ON THE ACTIVATION

Joan Snitzer's process of making is often guided by music. She spent her earliest days practicing the piano, and later developed an interest in tango dancing. Movement to music has been central to her artmaking since the beginning of her work as a painter in the 1970s. On the occasion of *Carefully Constructed* at A.I.R. Gallery, Snitzer's modular *Graphic Phonemes* is assembled and disassembled to *Rebonds* (1987-89) by the Greek-French composer and architect Iannis Xenakis (1922-2001). The work's title ("rebounds") is in itself both an instruction and an anomaly--Xenakis rarely chose titles for his music that represent what directly happens in the score. Like Snitzer, Xenakis was also a polymath, drawing from his background in design and engineering to build a decidedly unique transdisciplinary practice as a composer. His sketches for musical work often begin graphically, resembling a blueprint for a building to be realized. In *Rebonds*, an ensemble of percussion instruments in seven pitches are brought together by a single musician. The work is in two autonomous movements ("A" and "B"), but the order is left indeterminate and at the discretion of the performer. There is a clear pulse across the piece that seems to tie it together, though this logic quickly eludes itself to become another idea, like a passing thought. Discontinuity might become continuity, but it never quite reaches it. Sounds and ideas remain in rebound.



Graphic notation of Xenakis' *Rebonds B* (1987-89)

A deeply invested educator herself, seven of Snitzer's current and former students from Barnard College join her in the gallery to construct and deconstruct Graphic Phonemes, accompanied by Xenakis' exuberant 11-minute composition. The modular paintings never appear quite the same.

Landon Wilson

To view documentation of the activation, please visit <https://www.airgallery.org/exhibitions/carefully-constructed>

PERFORMERS

Ruby Alexander

Anusha Ali

Galiba Gofur

Aimi Halle

Penelope Shapiro

Yuhan Zhao

Zixuan (Josephine) Zhuang

RECORDING

Iannis Xenakis, Rebonds B & A, performed by Steven Schick, 2000