

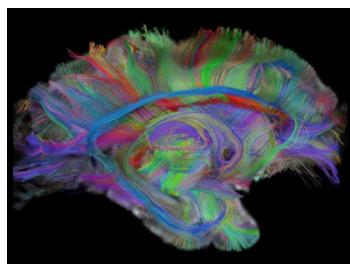
The Insuppressible Compulsion
To Make Sense Of Visual Stimuli
Donna F. St. John

Introduction To Visual Studies
Dianne Zeeuw
Fall, 2014

This paper is intended as a structural investigation of how the human mind engages, interprets and retrieves the visual stimuli in artwork when the sensory input contains novelty or two or more opposing visuals. The paper will also probe the mechanics of how we categorize visual stimuli based on past precepts and the struggle to create new arenas to better fit the reality of the stimuli. This inquiry will include the investigation of how the mind organizes and makes sense of visuals in combination with text, and multi-stimuli sensory input. It will also examine the interconnectivity of the mind as it is being explored in the areas of neural research and the area of visual studies in connection to contemporary art.

How does the brain engage in visual stimuli?

Although we now know that the brain is very much interconnected, we are only discovering how this connectedness of lobe interpretation affects our perception of stimulus reality. “In August 2008, MIT Technology Review reported on how new imaging technologies are revealing the intricate architecture of the brain, by creating a series of highly-detailed, and never seen before, blueprints of its dense connectivity.”

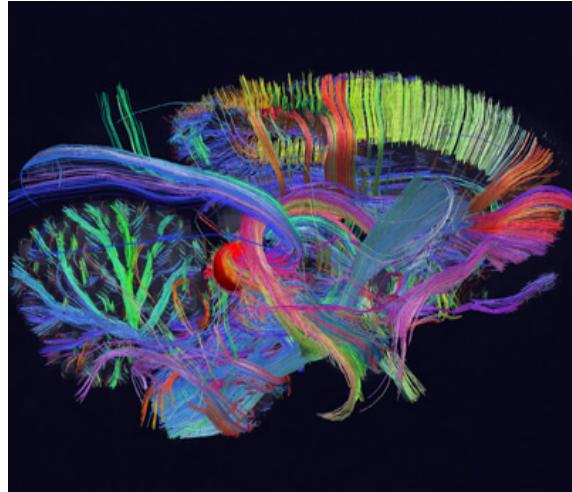


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This visual illustrates the intricate overlap of lobe function and the complexity of stimuli response; as you can see from the image, there is no clear desegregation of lobe function but there is an elaborate, interconnected web of neural fibers.

What are the features of visual processing?

As Robert Solso suggests that we have a “bottom up” stimuli processing system that deals with the basic physical stimuli. We also have a second stage processing system sometimes called “top-down” or directed perception. Directed perception is based on ones own history and previous knowledge, (this second stage will be discussed later in the paper). Solso discusses the first stage in the following quote, “What you sense—what you “see”—is activated only by reflected photonic energy that bounces off a painting and is detected by sensory neurons, it deals with the way the eye and brain work in matched synchrony.”² The visual process begins with the input of information in the retina. In early vision, before we are consciously telling our eyes where to look, we search for certain characteristics of objects like color, pattern, and movement. The human brain looks for structure in the world. We are set up to find patterns and disruptions of patterns. Once the initial input of information has taken place, we then process the information in lightning speed through the optic nerve and across the entire cortex, limbic system and the cerebellum. The cerebellum’s main function is coordination, balance, motor control, and synthesis of the senses. The image below shows an owl monkey’s brain. “The treelike shape at the lower left, for example, shows the longitudinal fibers of the cerebellum, a brain area that plays an important role in coordination and motor control, as well as in the integration of information from different senses. It’s important to point out that even if these images look extremely dense, “The human brain would look 25 times as complicated.” Says Wedeen.³



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It is clear that the sensory perceptions are overlapping and the connections and communication amongst the entire brain is a critical component in how and what we perceive. Kerry Friedman states, “The brain immediately passes these signals on from the eyes to make meaning out of what we see, but meaning may be constructed in many parts of the brain. It takes place not in one location as was thought in the early years of brain research, but in several locations throughout the cerebral cortex simultaneously, and even involves the motor cortex, which stimulates eye movements.”⁴

Dr. Robert Solso has labeled this complicated stimuli processing as “massive parallelism”. This theory suggests that the brain sends out impulses in a parallel fashion rather than in a series of steps. This parallel function engages countless millions of processing units concurrently.

How do associations and the function of short and long-term memory affect our perceptions of novel stimuli?

Memories reside in short-term memory while they are simultaneously strengthening their associations with previous encounters and cognition based information from our long-term memory. Every time a stimuli or action is rehearsed, it is strengthened

and reinforced in long-term memory. Learning and long-term memory is possible with the work of the hippocampus.

The hippocampus is critical for learning," says Gluck, "and it's also one of the most volatile, unstable parts of the brain—one of the first parts damaged if oxygen is cut off. Think of it as a highly maneuverable kayak; it has to immediately capture a whole range of information about an event and needs the ability to go rapidly through many changes. We think the hippocampus serves as a filter, learning new associations and deciding what is important and what to ignore or compress. That's why it's critical for learning. The hippocampus is, in a sense, a collating machine, sorting and then sending various packets of information to other parts of the brain. The hippocampus does not store memories permanently. It is a way station, though a supremely important one, Like a football player in the heat of the game, it passes the ball to other parts of the brain.⁵

The retrieval of memory is in part based on repetition and the classifications that we have built to make sense of the stimuli that we experience. As cognitive psychologist Robert Solso discusses the “top-down” directed perception in the following statement, “Each of us brings to the viewing of art an entire set of past experiences and expectations that largely influences what we perceive and how we interpret what we see.”⁶ If there is no previous exposure to a particular art form or novel visual than the viewer must either fit a “round peg in a square hole” which could lead to misinterpretation or it could lead the viewer to become more active by creating a new category to house the new art visual.

**How does the mind organize visuals in a variety of contexts,
(visuals as text, visuals in combination with text,
visuals as a multi-stimuli sensory stimuli
or visuals with opposing stimuli)?**

Dr. Paivio’s Dual Coding theory describes the different ways that humans respond to visuals and text. The Dual Coding System theory is based on the assumption that thinking involves the activity of two distinct cognitive subsystems. There is a verbal system that specializes in language and a nonverbal system specialized for dealing with

nonlinguistic images and events. These two systems are constantly working together to form meaning from the stimuli that we experience.

Lawrence Weiner was one of the first conceptual artists to reflect text as art. “Weiner’s employment of language allows the work to be used by its receiver. It is purposely left open for translation, transference, and transformation. Nor is it fixed in time and place, every manifestation and point of reception is different—each person will use the work differently and find a different relationship to its content: “One of the reasons I choose to work with language and other materials is that each time a piece can be built anew. Language is less impositional—there is always an incomplete, say expressionist sort. As the culture develops, the works change, or the culture itself begins to decay.”⁷

What Weiner has said in regards to language being less impositional may be true but is it may be more imposing than images. The neural research states that although language allows for individual elucidation, textual interpretation is more restrictive than image interpretation.

All visual stimuli are processed by the mind with varying degrees of foisting, some being born from our own past neural records and some being culturally imposed. Weiner’s work can be difficult to culturally interpret due to the selection of his words and the context of which the words are placed. This being said, the contexts of the words will unquestionably alter the meaning of the art piece. The words chosen and their context of them is what keeps Lawrence Weiner’s conceptual pieces open ended for the viewer.

In general terms, words are believed to begin their processing in the left hemisphere in a sequential fashion while images are believed to begin the processing in the right hemisphere in a gestalt fashion. Dr. Paivio has said, “It is true that the left hemisphere controls speech and dominates in comprehension and other language tasks, and the right

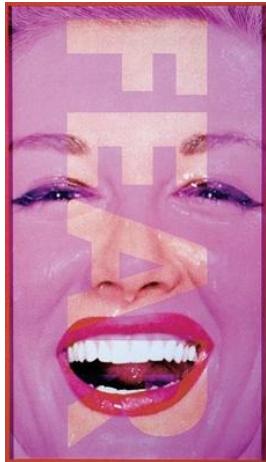
hemisphere dominates in certain tasks involving nonverbal information, such as manipulating objects “in the Mind’s Eye”. Up to a point, the speechless right hemisphere can recognize and comprehend language and the language-dominant left hemisphere can generate mental images.”⁸ Each form of information is then communicated to the other hemisphere via the corpus callosum.

Let’s consider the neural processing of images when placed in the same visual screen that includes text. Barbara Krueger has been creating contemporary art that appropriates specific slogans with cultural images that generate political and social statements. “I work with pictures and words because they have the ability to determine who we are and who we aren’t” - Barbara Kruger⁹

Kruger began her career as a designer and photo editor for Conde Nast publications. She writes short, scattered captions over appropriated images. These pieces are accusatory in tone. They remind us of the power of language and the cultural and social constraints thrusting us into a commercial and shallow existence. Barbara is also quoted as stating the following:

I am weary of the seriousness and confidence of knowledge. I am concerned with who speaks and who is silent; with what is seen and what is not seen. I think of inclusions and multiplicities, not oppositions, binary indictments, and warfare. I’m not concerned with pitting morality against immorality, as “morality” can be seen as a compendium of allowances inscribed within patriarchy, with its repertoire of postures and legalities....I want to speak, show, see, and hear outrageously astute questions and comments. I want to be on the sides of pleasure and laughter and to disrupt the dour certainties of pictures, property, and power.¹⁰

Kruger’s work manifests irony. Her careful, incongruent selection and juxtaposition of text and photo creates an uncomfortable visual study and an experimental interpretation for the viewer.



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The viewer is forced to synthesize both the text and image (Dual Coding), in a “massive parallelism” form of interpretation. Due to the contrasts of meaning, we will most likely be unable to find an existing cerebral category to place this combination of text/image in. In many ways Kruger is forcing us to “rethink” our existing prejudices and reassess our neural categories, which is exactly the point of her work. Deb Rockman states, “I suspect that language does indeed attract some viewers who are engaged between the drawing and the text. Gestalt principles require the viewer to move back and forth between image and text as the two cannot be perceived simultaneously.”¹² Consider Dr. Paivio’s research:

As its name suggests, the Dual Coding System theory is based on the assumption that thinking involves the activity of two distinct cognitive subsystems, a verbal system specialized for dealing directly with language and a nonverbal system specialized for dealing with nonlinguistic objects and events. At another level of analysis, it is a multimodal theory, because both systems are assumed to be composed of modality-specific (visual, auditory, etc.) representational units and structures that are internal isomorphs of the perceptual and behavioral characteristics of “words and things” rather than abstractions of them. The representations are connected to sensory input and response output systems as well as to each other so that they can function independently or cooperatively. The theory means that both systems are generally involved even in language phenomena. The verbal system is a necessary player in all “language games” but it is sufficient in only a few. In the most interesting and meaningful ones, it draws on the rich knowledge base and gamesmanship of the

nonverbal imagery system. Conversely, the nonverbal system cannot play language games on its own, but it can play complex nonverbal solitaire. The language system dominates in some tasks and the imagery system in others. Thinking is this variable pattern of the interplay of the two systems.¹³

We are able to “see” a house by thinking of the word house. We can think of the text assigned to the concept of house by thinking of the image “house”. The verbal and image systems are connected and related, for one can think of either text or image and form the mental image or the textual equation or definition of the concept. Processing text transpires in a different location and a different coding system, which can affect the way we respond to the combination of text and image when they are perceived simultaneously.

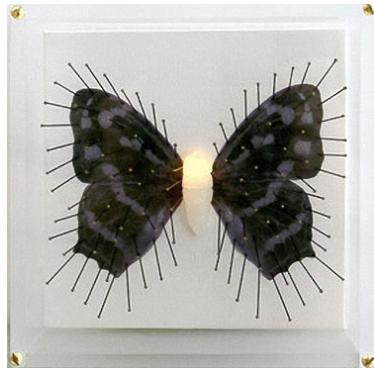
Now let us consider the neural processing of multi-sensory artwork or artwork that uses non-traditional media. What happens when the mind is faced with opposing or novel stimulus that does not include text? Cognition and interpretation then might take a somewhat different path. Pavio states:

The activation corresponds to perceptual recognition, which has long been interpreted as requiring some kind of match between a sensory pattern and a corresponding memory representation. The analysis applies to dynamic as well as static entities. Measures of stimulus familiarity are operational indicators that such perceptual memory “templates,” static or dynamic, are available and accessible. Recognition depends on a similarity match between the stimulus and an internal representation “selected” from multiple candidates: the sensory pattern “homes in” on the most similar image or template.”¹⁴

We first try to fit the novel or conflicting stimuli into an existing categorical cognition that we have formed based on past experience. We will most likely get the information wrong when constructing new meaning from novel or conflicting visuals. Barbara Stafford states, “When confronting an apparently “chaotic” tangle, individuals, irrespective of their social and cultural difference, one must quilt the simultaneously occurring variegated stimuli together into a personal interpretation.”¹⁵

In the 21st century, some artists are intentionally or unintentionally doing just that. They are breaking new grounds in cognition by capitalizing on connecting a diverse media or combining conflicting visuals. Consider June Palk, “J’ai des Papillons Noirs Tous les Jours”. In this piece Palk calls forth a natural history exhibit.

“Twenty-eight silk-winged butterflies are in individual cases, fifty pins per wing; their plastic bodies pulse seemingly randomly with light. It’s a work of great and melancholy charm, which first draws one in for close examination of the mutely colored wings, and then, as one retreats a step, fills one’s visual field with softly throbbing lights. This small scripted step is what remains of a typical installation’s typically more full-bodied participation.”



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This installation requires the synthesis of a science exhibit with a fine art exhibition, human made technology with the purity of nature. This combination of stimuli pushes our neurological categories to new levels.

As contemporary art becomes more conceptual and multi-sensory we may be propelling neurological, social and artistic boundaries. Consider this Contemporary Installation by Felix Gonzalez-Torres.

Felix Gonzalez-Torres produced work of uncompromising beauty and simplicity, transforming the everyday into profound meditations on love and loss. “Untitled” (Portrait of Ross in L.A.) is an allegorical representation of the artist’s partner, Ross Laycock, who died of an AIDS-related illness in 1991. The installation is comprised of 175 pounds of candy, corresponding to Ross’s ideal body weight. Viewers are encouraged to take a piece of candy, and the diminishing amount parallels Ross’s weight loss and suffering prior to his death. Gonzalez-Torres stipulated that the pile should be

continuously replenished, thus metaphorically granting perpetual life.



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Because the choice of art media no longer shackles contemporary artists and their artworks, the viewing of contemporary art can be extremely powerful and multi-sensory. It may have the ability to push the neural categories to new and different levels of comprehension.

Let's cogitate on the contemporary work by Sterbak, *I Want You to Feel the Way I Do*.

Sterbak's work is difficult to classify by medium or style. Influenced initially by minimalism, she chooses her often unconventional materials deliberately, guided by her desire for a direct, expressive relationship between material and idea. Thus, at different times she has used electrical wire, dressmakers' measuring tapes, and beefsteak, as well as more common materials such as lead, glass and bronze. The result can be menacingly aggressive, (as in the electric dress entitled *I Want You to Feel the Way I Do* (The Dress) (1984-85) or coolly ironic, as in *Generic Man* (1987) or *Standard Lives* (1988), the meaning sometimes made more pointed by the use of text.



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The human mind constructs meaning from the variety of stimuli that we encounter. We engage, interpret and retrieve this stimuli using millions of neuron operating units in conjunction with processing systems and our past exposures to try and make sense of our world. We create categories to file the stimuli experiences and we retrieve those files as a means of distinguishing and organizing the moments of our very lives. Contemporary artwork has the ability to captivate our entire being through the avant-garde use of text, innovative media and multi-sensory applications that are complex while at the same time alloyed with a sense of a simplified hope that visual studies in art can in a sense “hypnotize” our traditional neural patterns allowing us to rethink our neural categories, change our preconceived perceptions about our world or at least about ourselves.

Notes

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5. Jill Neimark, It's Magical, It's Malleable, It's ... Memory. (Psychology Today, (2011), <http://www.psychologytoday.com/articles/199501/its-magical-its-malleable-its-memory>
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9. Barbara Kruger, (2012). <http://www.artandcointv.com/blog/2012/02/moma-exhibition-examines-the-evolution-of-the-print-medium/>
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15. Barbara Stafford, Visual Analogy: Consciousness As the Art of Connecting, First MIT Press, Recombinancy: Binding the Computational “New Mind” to the Combinatorial “Old Mind”, (Chapter 4, 2001), 144.
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<http://www.thecanadianencyclopedia.ca/en/article/sterbak-jana/>

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- Paivio, Allan. *Mind and Its Evolution, A Dual Coding Theoretical Approach*. Lawrence Erlbaum Associates Publisher: Nahwah NJ, 2007.
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Donna F. St.John

Contemporary Art & Visual Studies

Are Contemporary artists intentionally or unintentionally breaking new neurological boundaries?

Qualia – The Subjective Component Of Sensory Perception
Dr. Stafford

Dual Coding- Serial Approach of Sensory Interpretation, Dr. Paivio
Massive Parallelism- Parallel Approach of Sensory Interpretation – the ability to process many different thoughts simultaneously, based on past exposure – Dr. Solso

Bottom-Up or Nativistic Perception and Top Down or Directed Perception – Visual input and perception based on prior or simultaneous exposure to particular stimuli – Dr. Solso

Cerebellum & Corpus Callosum – Sensory Syntheses

Consider the visual perception of this Academic painting?

Gerome *L'Eminence Grise* - 1873



Contrasted with the multi-sensory perception
of this Contemporary Installation?

Felix Gonzalez-Torres. Untitled (Portrait of Ross in L.A.), 1991



Visual Perception
1873

Multi-Sensory Perception
Present

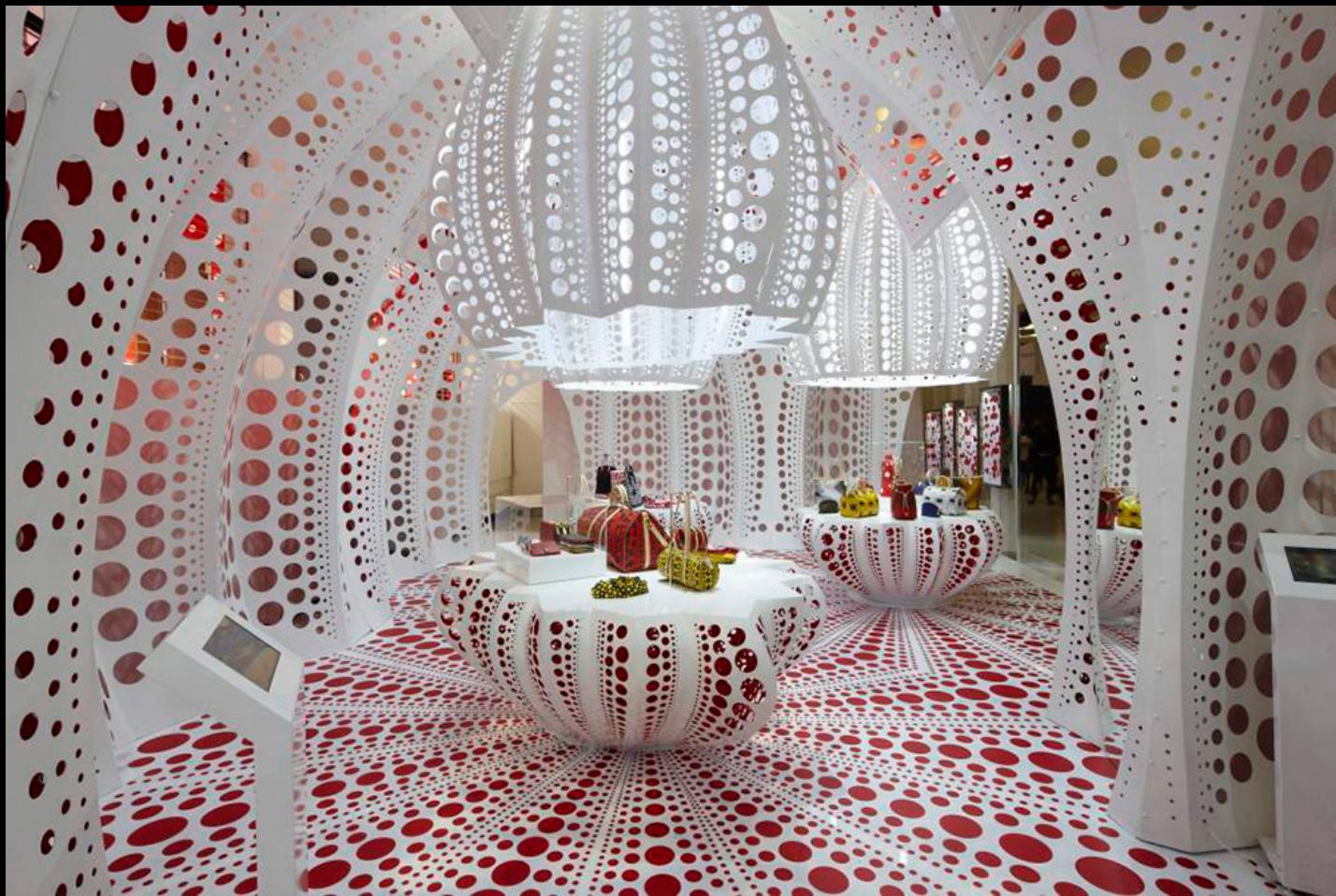


Dots & Visual Perception –

A Sunday on La Grande Jatte, Georges Seurat, 1884



Kusama



Yayoi Kusama



Seurat and Kusama

1884

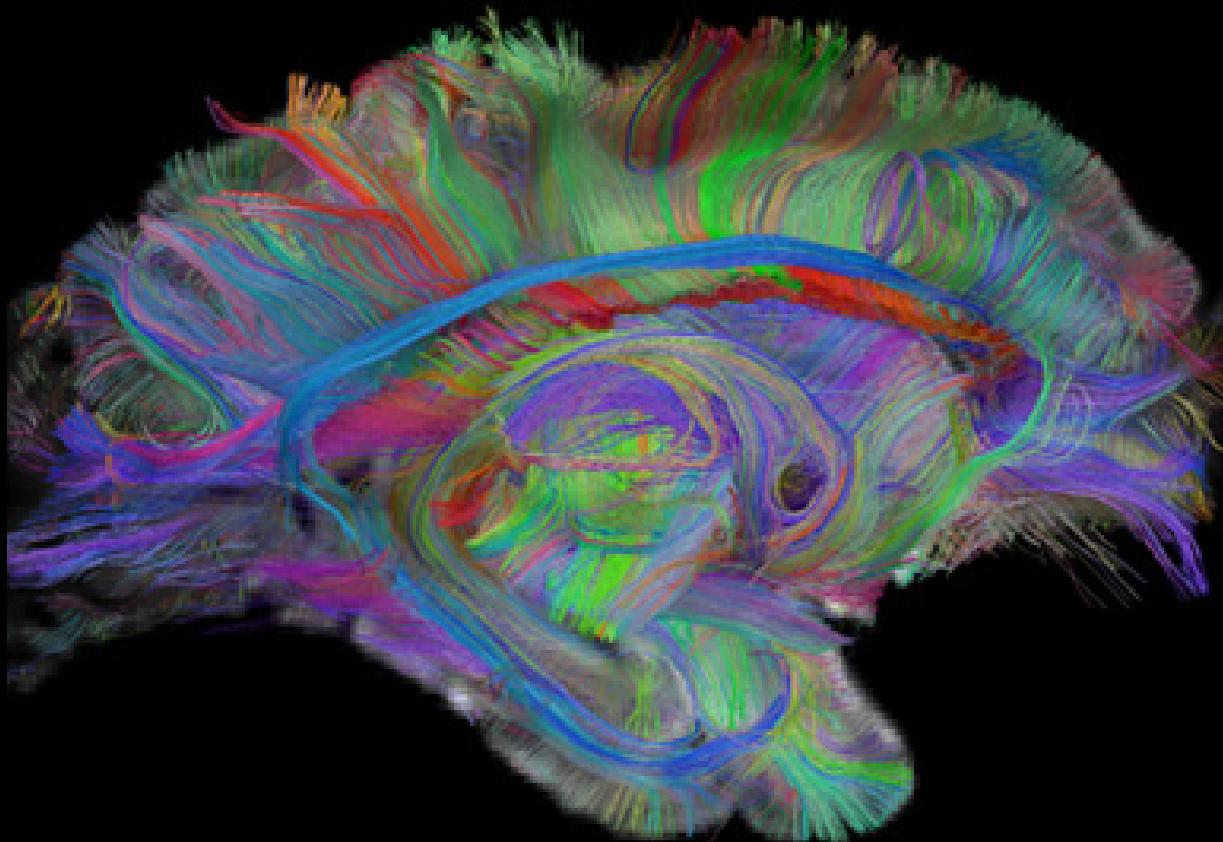


Present



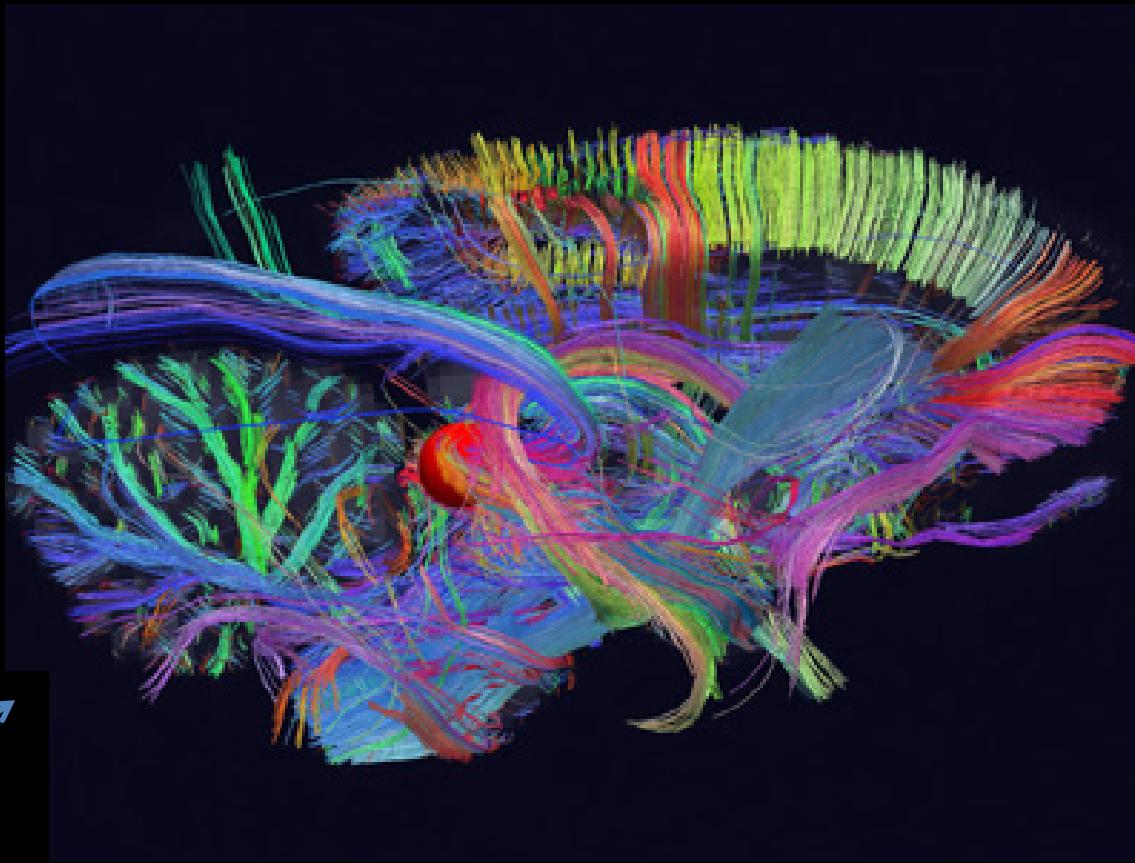
How has the multi-sensory aspect of contemporary art changed our visual art experience?

Visual Studies – Complex and Connected Stimuli Processing



Macaque Monkey

Van Wedeen, Patric Hagmann
MIT



Cerebellum
Owl Monkey

- CONTEMPORARY ARTISTS ARE COMBINING VISUALS AND TEXT, AND BECOMING MORE MULTI-SENSORY.
- IS THE ART ENCOURAGING NEURAL SYNTHESIS OR ARE NEURAL CHANGES IN OUR BRAINS CULTIVATING CHANGES IN VISUAL ART?
- Consider the CORPUS CALLOSUM & CEREBELLUM

Are contemporary artists intentionally providing us with dual coding exercises?

Kosuth One and Three Chairs



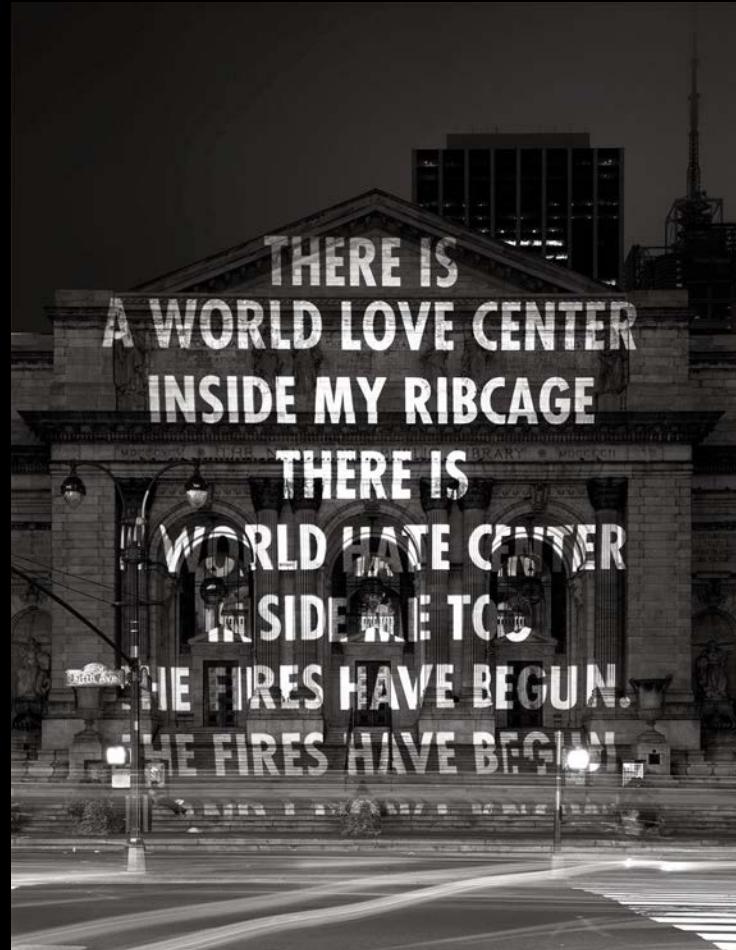
chair, n. hence w₁ chaise (fempl) and chay;
(a) cathedra, cathedral (adj) and n), cathedralic;
element, cathedral, cathedral, q.v.; w₂.

1. Gr Andra, a seat of Gr Areobal, to sit, and,
ult. F ART, combines with assu, down of the prefix
assu, to form Andalva, a backed, four-legged,
often two-armed seat, whence L cathedra, LL
bishop's chair, ML professor's chair, hence dignity;
as in 'to speak ex cathedra', as from—or as if
from—a professor's chair, hence with authority.
L cathedra has LL/ML adj cathedralis—see esp
CATHEDRAL; and the secondary ML adj cathedralic,
whence R legal cathedralic.

- Lawrence Weiner – Text as Art



Jenny Holzer – Text as Art



Jenny Holzer – Living Series Minneapolis



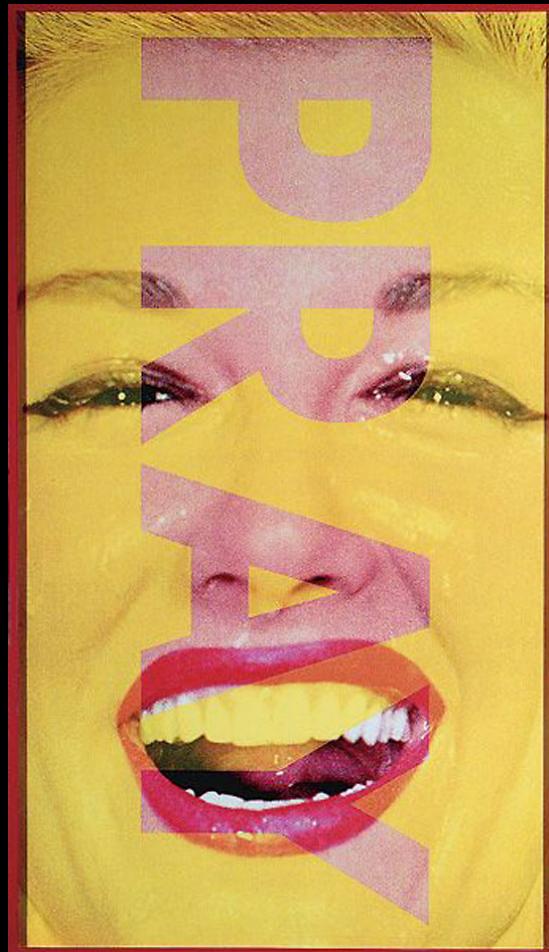
Jenny Holzer – text as art

The Living Series

YOU CAN MAKE YOURSELF ENTER
SOMEWHERE FRIGHTENING IF YOU
BELIEVE YOU'LL PROFIT FROM IT. THE
NATURAL RESPONSE IS TO FLEE BUT
YOU DON'T ACT THAT WAY ANYMORE.

Art and Text

Barbara Krueger - Untitled



Barbara Kruger



A black and white portrait of a man with dark hair and a prominent mustache. He is wearing a dark, high-collared jacket or coat. The lighting is dramatic, with strong highlights on his forehead and nose, and deep shadows on the sides of his face and neck.

if

You don't

controll you mind

someone else will

Art Using Visual and Text

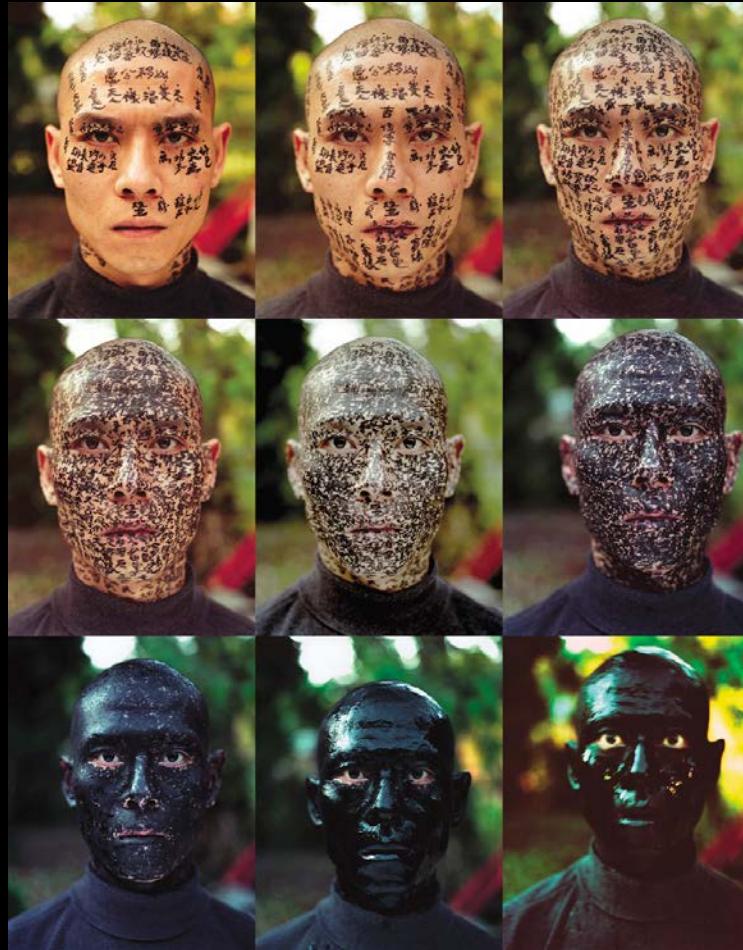
- Deb Rockman





a beaver builds dam

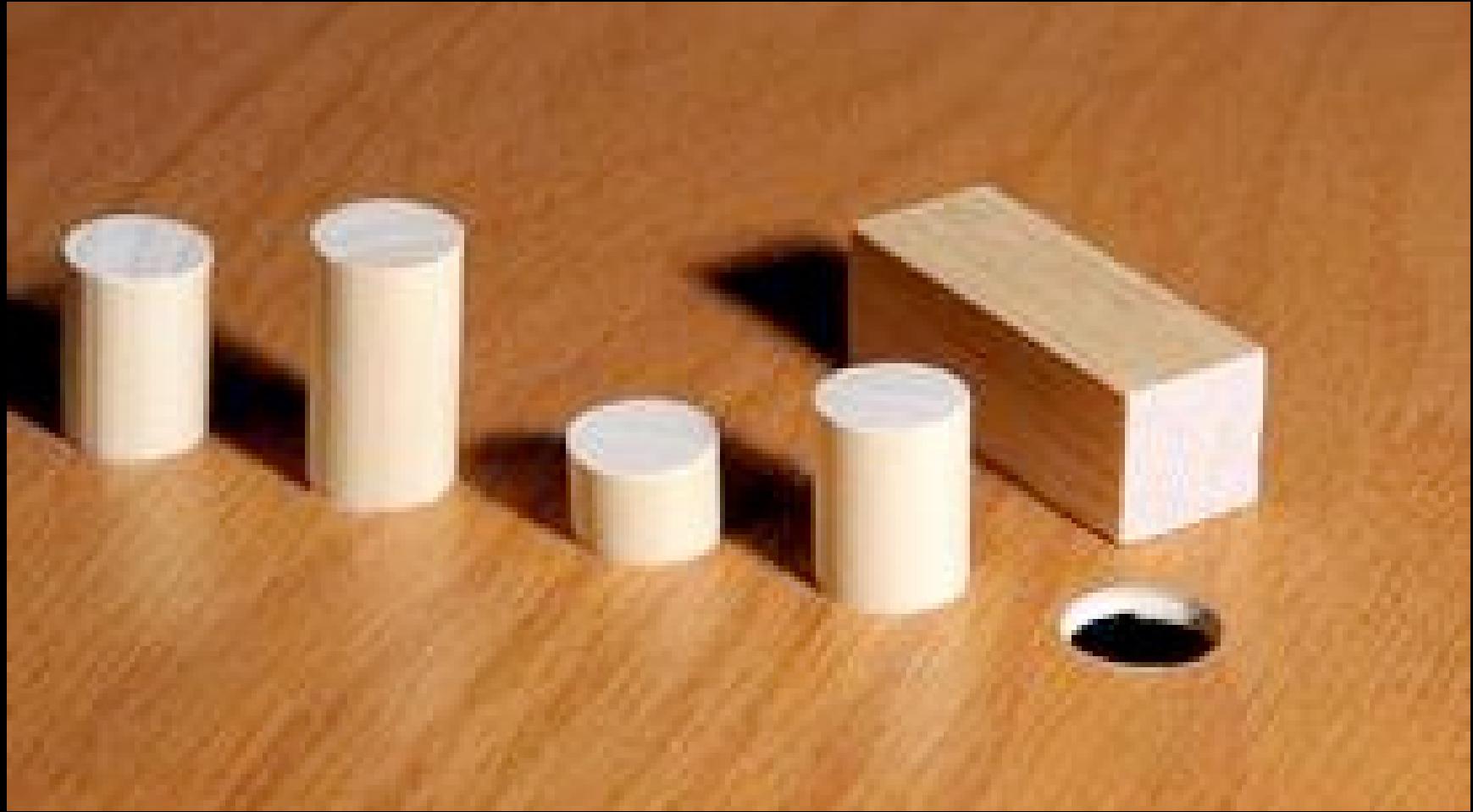
Zhang-Huan Family Tree



Is the viewer's "perception" more intense or changed when viewing mixed media artwork?

"By what means do the diverse perceptions gathered by our five senses become assimilated within the brain and then sediment into an intimately private, yet simultaneously cultural and social, identity?" Barbara Stafford

Categorizations based on past experiences



Michael Beitz – Body/Brick



Can contemporary art lead to a different or more intense perception for the viewer?

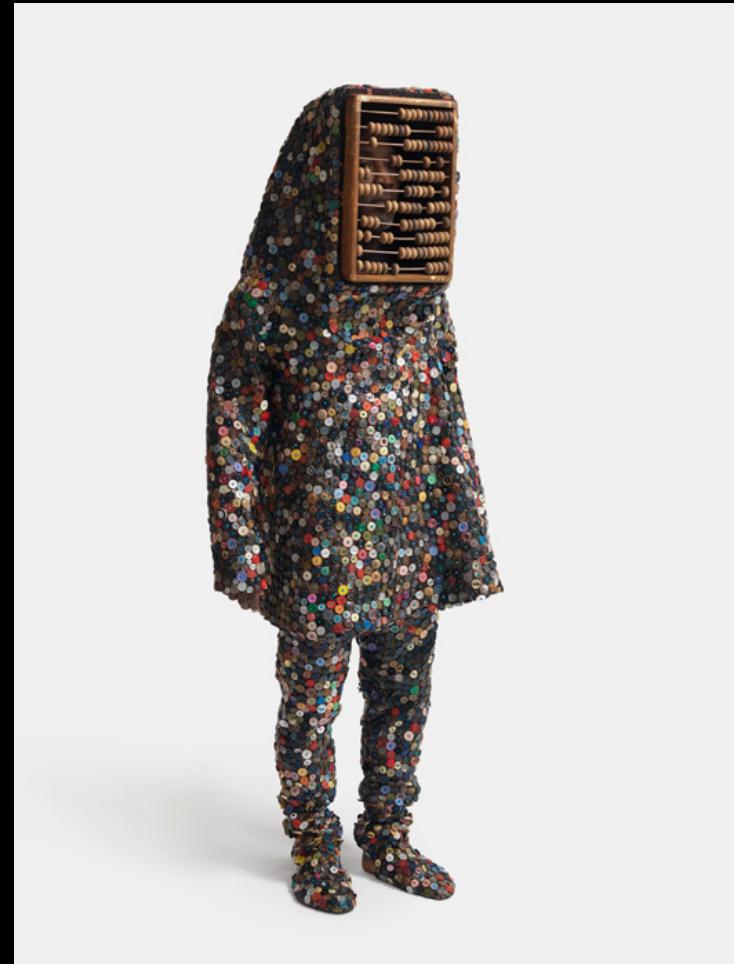
Michael Beitz – Belly/Brick



Stafford

- “When confronting an apparently “chaotic” tangle, individuals, irrespective of their social and cultural differences, must quilt these simultaneously occurring variegated stimuli together into a personal interpretation.”
- The more sensory, the more chaotic and multi-lobe - the more room for interpretation or misinterpretation of the artwork.

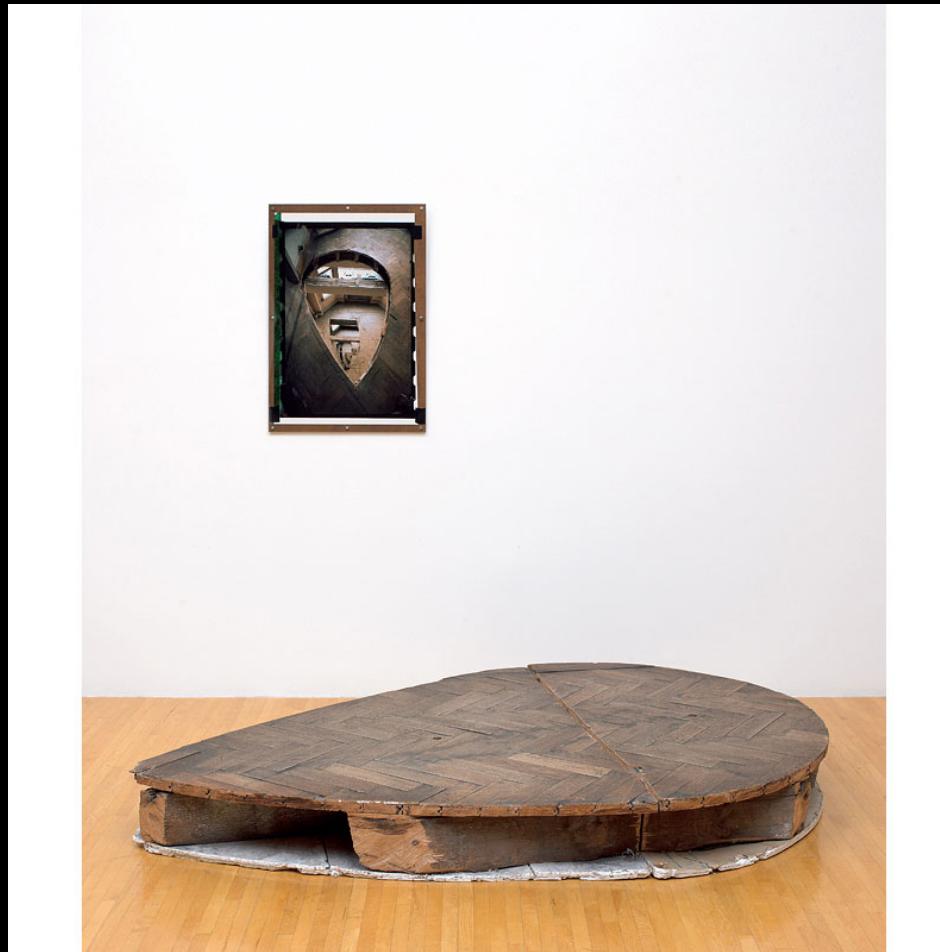
Nick Cave Sound Suits

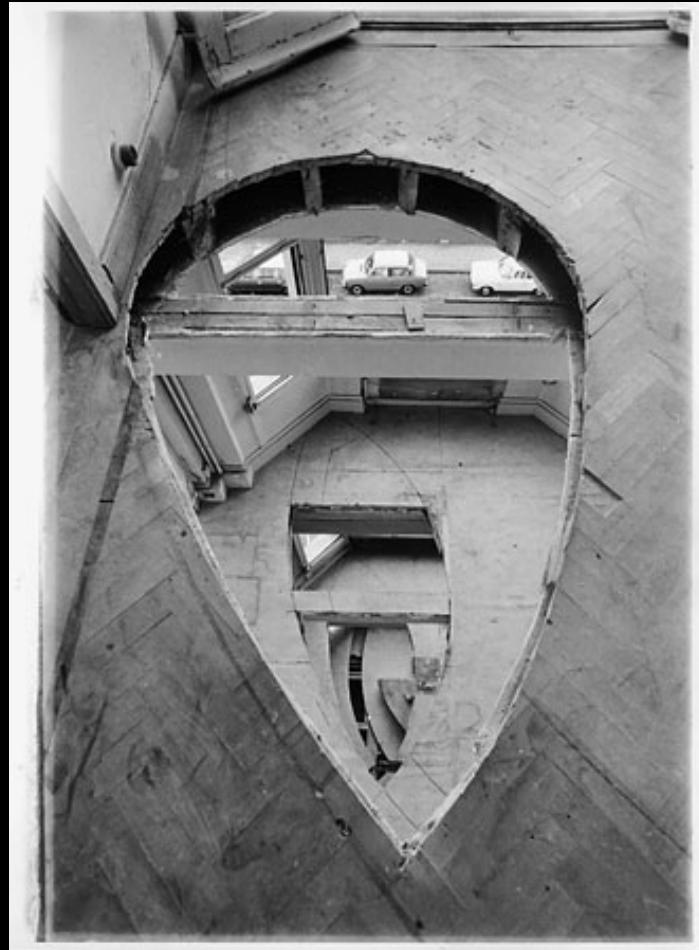


Isa Genzken – 2014 Museum Of Contemporary Art



A delicate touch with a chain saw: For “Office Baroque” (1977) Gordon Matta-Clark cut through the floors of an office building in Antwerp.





What happens when the viewer experiences conflicting visuals or stimuli?

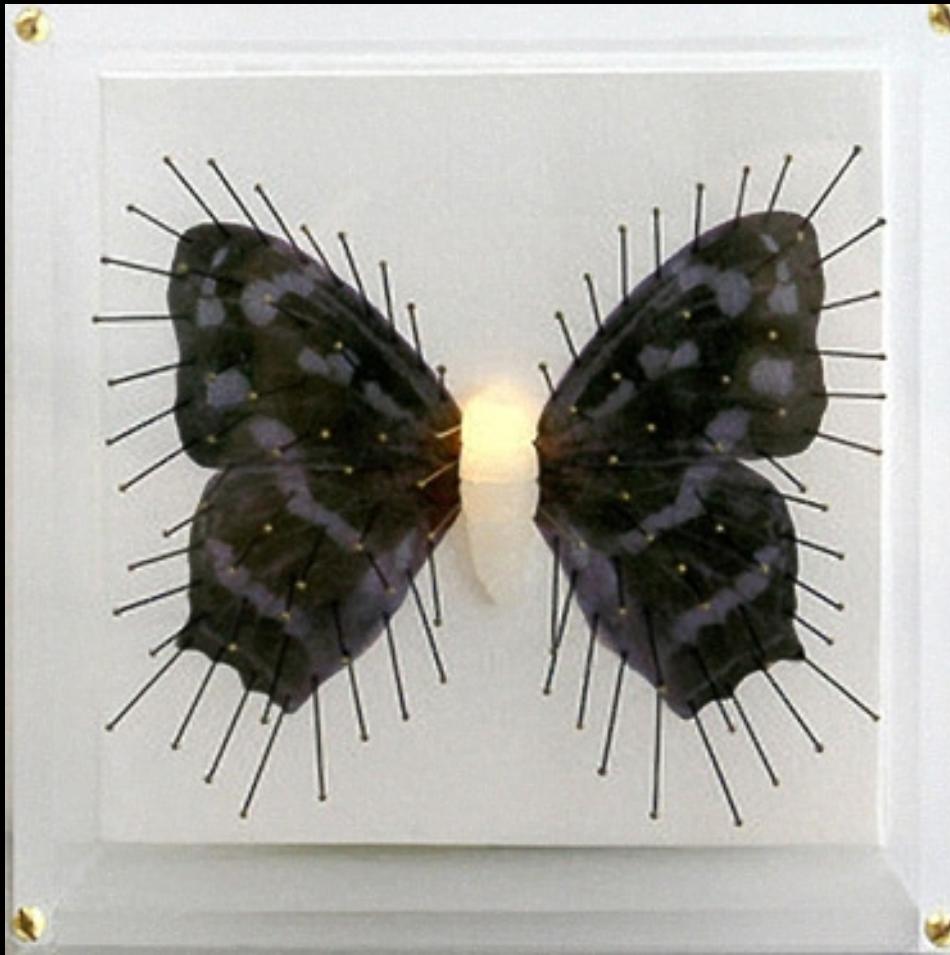
Nina Levy: Compelling Discomfort



Nina Levy - Afterthought



Gail Wight – Papillions Noir



Qualia – The Subjective Component Of Sensory Perception

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Cerebellum & Corpus Callosum – Sensory Syntheses

Sterbak, I Want You to Feel the Way I Do.

