

Micromegas: Complete Incompletion

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Daniel Libeskind's 1979 *Micromegas* drawings are disorienting. Each of the ten drawings is composed of solid and dashed lines; the dashed lines are a slightly lighter line weight than the solid lines. The drawings are basic extruded geometries in parallel projection. The simplicity of the drawing technique allows for the complexity of the drawings to be grounded in the real and architectural, compounding the confusion.

Colin Rowe and Robert Slutzky argue for the disorienting and simultaneous perception in their 1963 essay "Transparency: Literal and Phenomenal." The essay posits that literal transparency deals with a translucent object in deep space while phenomenal transparency have frontally displayed objects in shallow, abstracted space.¹ Literal transparency is purely visual, allowing the viewer to see through the object. Phenomenal transparency is more than visual; Rowe and Slutzky liken it to a *double entendre* in writing.² Le Corbusier's Villa at Garches is successful through its contradiction of spatial dimensions, which is an attribute in Libeskind's *Micromegas*. The distorted parallel projections are contradictory, confusing the viewer and forcing her to construct her own spatial reality for the project. No narrative is given. The flattening of space in Fernand Leger's *The Three Faces* corresponds to the flattening of space in *Micromegas*. Although the viewer understands that the parallel projections can move to an infinite space, the crossings of infinities flatten one another. They are constantly pulling back and forth, never allowing the infinity to exist.

In *Micromegas*, there is no point to look and understand the drawing as a compilation of three-dimensional objects, which flattens the drawing to two dimensions, fulfilling the requirement of phenomenal transparency. The ambiguity in both phenomenal

¹ Colin Rowe and Robert Slutzky, "Transparency: Literal and Phenomenal," *Perspecta* 8 (1963): 48.

² Robert Venturi, *Complexity and Contradiction in Architecture* (New York: The Museum of Modern Art, 2002): 45.

and literal transparency is seen in *Micromegas*, as it contains both framed moments of transparency and a disorientation of space. *Micromegas*'s disorientation can be read through Voltaire, cubism, constructivism, and its own geometries. *Micromegas* is a series of ten line drawings that originated as eleven pencil sketches. The drawings are: Little Universe, the Garden, Arctic Flowers, Time Sections, the Burrow Laws, Leakage, Maldoror's Equation, Dance Sounds, Vertical Horizon, and Dream Calculus. Although each drawing uses the same system of extruded geometries, each drawing is unique. For closer analysis, I will be looking exclusively at Maldoror's Equation.

The names of the drawings include scientific and mathematical terms, such as laws, leakage, equation, and calculus. These drawings are a system or a procedure, part of a scientific or mathematical equation. Each drawing is a study or outcome of an experiment. As a part of a process, the drawing could then be seen as not even a complete product, but the point in which the experiment was stopped to extract the material. If left in the experiment for longer, perhaps the drawing would continue to change. The drawing is a temporal moment, not a completed or refined work.

Voltaire's *Micromegas* is a satirical story contemporaneous with the introduction of the microscope and telescope, which were making large scientific contributions.³ In his article "Size matters," Paul Emmons posits that the question of scale became an issue with the emergence of these new scientific tools, and the idea of the very small that we could then discover paralleled the idea of an existence of the very large, like in *Micromegas*. When skipping Voltaire's story and thinking only of *Micromegas* as a way of looking at

³ Paul Emmons, "Size matters: virtual scale and bodily imagination in architectural drawing," *Architecture Review Quarterly* 9, no. 3/4 (2005): 229.

the microscope or scientific experiment, the drawings are part of a larger scientific system instead of a finished drawing or product.

Perhaps Voltaire's *Micromegas* story is more indicative of Kipnis's reading of Libeskind's *Micromegas* as an "intellectual esoterica."⁴ In the satirical story, *Micromegas*, a man of immense size and knowledge, patronizes those smaller in stature and intellect to him. Libeskind uses his *Micromegas* as a game to assert his dominance. His puzzle is patronizing, constantly asking us to redefine it, but never getting an answer.

Micromegas is an oxymoron; it is both small and large, presenting the drawing as scaleless. Maldoror's Equation does not have a large difference in scale in the objects. While some are longer or thicker, in general they appear to be drawing in the same scale, clumping at moments to create areas of density or pulling apart to create lightness. While Voltaire's *Micromegas* contrasts the largeness of the main character with the whales of earth, in Libeskind's drawings, the micro and mega provide two possibilities for the drawings: they can either be small or large. Libeskind does not assign scale; the scale is up to the viewer.

Libeskind's work has been spoken about as an allusion to both past and future. Robin Evans writes in "In Front of Lines that Leave Nothing Behind" that Libeskind's work is a "construed projection of the past."⁵ Melanie Domino writes that the drawings do not capture a single moment of time, but are a prospective unfolding of future possibilities while alluding to events in the past.⁶ Jeffrey Kipnis writes in *Perfects Acts of Architecture*

⁴ Jeffrey Kipnis, *Perfect Acts of Architecture* (New York: The Museum of Modern Art, 2001): 110.

⁵ Robin Evans, "In Front of Lines That Leave Nothing Behind," in *Architecture Theory since 1968*, 480-489 (Cambridge, MA: The MIT Press, 2002): 428.

⁶ Melanie Domino, "Envisioning Architecture: Drawings from the Museum of Modern Art," in *Envisioning Architecture: Drawings from the Museum of Modern Art*, ed. Terence Riley Matilda McQuaid, 208-209 (New York: The Museum of Modern Art, 2002): 208.

that Libeskind's includes "the history of modern drawing."⁷ Each critic, in her unadulterated praise of Libeskind's use of history, does not place him in a consistent moment. While they see references to Constructivism, Cubism, and Le Corbusier, these references are never fully divulged. When read through each of these references, *Micromegas* can be seen as a completely different work, but always conforming to the idea of *Micromegas* as a temporal and unfinished moment in architecture.

Russian Constructivism used geometric shapes to create order in an architecture that contradicted the political chaos of the moment.⁸ El Lissitzky's *Proun* drawings have drawn many comparisons to *Micromegas*. *Proun* was a series of abstract geometric collages from the early 1920's. Like *Micromegas*, *Proun* uses orthographic, isometric, and axonometric representations of space and form, while totally disregarding perspective. Through parallel projection, El Lissitzky focuses on tectonic assembly. Parallel lines allow the viewer to place the shapes in relation to one another, whereas perspective forms a unity of shapes through the eye's gaze. *Micromegas* is also tectonic. The disregard of perspective for parallel projection asks the viewer to see the extrusions in Libeskind's drawings as an assemblage of parts, rather than a unified composition.

Constructivist works use diagonals to create dynamism in an otherwise static and unified composition. Jennifer Shields argues the diagonals allow the canvas to be seen as infinite space, as the geometry can be pointed off the page.⁹ Maldoror's Equation has a heavy use of diagonals. The diagonals point at different angles, although each is drawn in parallel projection. The diagonals contrast to the straight parallel projection, which stay true to the x and y axes of the drawing. The diagonals point off the page, as Shields was

⁷ Jeffrey Kipnis, *Perfect Acts of Architecture* (New York: The Museum of Modern Art, 2001): 110.

⁸ Jennifer A. E. Shields, *Collage and Architecture* (New York, NY: Routledge, 2014): 65.

⁹ Jennifer A. E. Shields, *Collage and Architecture* (New York, NY: Routledge, 2014): 66.

describing in *Proun*, but there is not a sense of infinite space beyond the page in Maldoror's Equation. The moments of density are central in the composition, creating a frame of lightness around the drawing. As the drawing frames itself, the boundaries are set. Conversely, in *Leakage*, a drawing in the *Micromegas* series, the diagonals are more prevalent in the composition, less hidden in the larger composition as they are in Maldoror's Equation. The strong diagonals exist at the edges of the page. On the left, a density of diagonals beings, projecting a larger system off the page. The diagonals, however, are perfectly ended at the edges. They do not continue to oblivion. The extrusion is capped, and the full piece is defined.

Constructivism took techniques including collage from cubism. Evans writes that cubism's pictorial fragmentation is also seen in *Micromegas*.¹⁰ Evans specifically references synthetic cubism the second phase of the movement, which used collage and strong geometric features. Braque's 1913 *Still Life with Tenora* uses the papier collé technique uses a layering of paper as well as pencil marks and pinholes disassociate the object profile from the materiality.¹¹ Five pieces of paper with varying shades of brown are piled on a piece of paper. Around the paper are line drawings. A figure of a clarinet is seen as well as sketches of basic geometric which extend from the collage.

The collage in cubism and constructivism vary considerably from *Micromegas* in that collage of the former is real. In *Still Life with Tenora*, the five pieces of paper are distinguishable as individual objects from the rest of the paper. In *Proun*, the geometric objects are recognizable as such. El Lissitzky even uses distinct color to differentiate the objects from one another. *Micromegas* at first glance seems like a collage. The

¹⁰ Robin Evans, "In Front of Lines That Leave Nothing Behind," in *Architecture Theory since 1968*, 480-489 (Cambridge, MA: The MIT Press, 2002): 484.

¹¹ Jennifer A. E. Shields, *Collage and Architecture* (New York, NY: Routledge, 2014): 63.

architectural elements, or geometric extrusions, lay on top of one another, producing a layering of space. This is an illusion. Libeskind explains in his writing on *Micromegas* and Collage Rebus that there is no hierarchical order present in his drawings, thus no physical layering.¹² No object is on top of another. The pieces blend in to one another, creating a sense of confusion as one tries to determine where the piece begins and ends. There is no collage in *Micromegas*, only the notion of collage.

While there is no real collage, the fragmentation of forms implies collage in *Micromegas*. Evans states “fragmentation assumes the possibility of reconstructing an original that has been broken.”¹³ This idea is similar to Robert Venturi’s idea of inflection in his essay “The Difficult Whole.”¹⁴ In the examples given in “The Difficult Whole,” the parts are broken and scattered throughout the building, turning the experience into a scavenger hunt, which creates a slow revelation of the building and the subject walks around it. In *Micromegas*, the pieces are only fragments; they are not wholes that can be found in the rest of the drawing. In this way, the possibility of reconstruction is entirely up to the subject. Evans understand this, stating further that what is “detached from drawings will fall away form the world.”¹⁵ If the pieces of *Micromegas* are not in the drawing, they have fallen away from the internal world of the drawing. The viewer is sent on a quest to find the fallen fragments. She must transcend worlds to complete the drawing.

The possibilities of completing the drawing are almost endless. In a small moment of Maldoror’s Equation, a simplified version of an object seems to be a singular item.

¹² Daniel Libeskind, “Daniel Libeskind's Texts for the Works,” *a+u*, no. 215 (August 1988): 132.

¹³ Robin Evans, “In Front of Lines That Leave Nothing Behind,” in *Architecture Theory since 1968*, 480-489 (Cambridge, MA: The MIT Press, 2002): 481.

¹⁴ Robert Venturi, *Complexity and Contradiction in Architecture* (New York: The Museum of Modern Art, 2002): 88.

¹⁵ Robin Evans, “In Front of Lines That Leave Nothing Behind,” in *Architecture Theory since 1968*, 480-489 (Cambridge, MA: The MIT Press, 2002): 481.

When reduced to basic forms, there are seven independent geometries. Although I extracted seven geometries, another person may extract more or less, seeing different combinations in the singular moment in the composition. The drawing is constantly in motion as the viewer strives to complete the fragmentation. The intrigue the viewer feels as she solves the puzzle is the purpose of *Micromegas*. Evans states the “quest for secrets is more interesting than its eventual recovery.”¹⁶ *Micromegas* is this quest for secrets, and the inability to discover all the secrets keeps the drawing interesting for the viewer.

Evans continues to argue that by creating a drawing, which creates form before signification confuses critics, as the meaning is discovered after the drawing rather than implanted within it.¹⁷ Libeskind distills his drawing to pure structure, stating that the system is not a process supported by symbols, but a process whose manifestation is mediated by symbolism.¹⁸ Libeskind is not looking for symbolism in his creation. He uses recognizable architectural elements in the drawing; the extrusions can be read as doors, frames, and beams. He compounds these basic elements with a basic drawing convention: parallel projection. The drawing is produced in a basic way: single lines. In its components, the drawing is simple and follows basic conventions of technique, something that cannot be overly analyzed by critics. When complied, however, the drawing becomes interesting, yet still cannot be captured by critics. As *Micromegas* is understood, it moves further from the truth. The drawing is constantly mutated, and therefore escapes criticism.

Eisenman discusses the illusory qualities of *Micromegas* in his essay

“Representations of the Limit: Writing a ‘Not-Architecture.’ He sees Libeskind’s misuse

¹⁶ Robin Evans, “In Front of Lines That Leave Nothing Behind,” in *Architecture Theory since 1968*, 480-489 (Cambridge, MA: The MIT Press, 2002): 484.

¹⁷ Robin Evans, “In Front of Lines That Leave Nothing Behind,” in *Architecture Theory since 1968*, 480-489 (Cambridge, MA: The MIT Press, 2002): 484.

¹⁸ Daniel Libeskind, *Daniel Libeskind: the Space of Encounter* (New York: Universe Publishing, 2000): 84.

of basic architectural conventions as a transgression, a constructed move against architecture.¹⁹ Libeskind's drawings must be read, and by reading them the viewer applies signification to them, moving them beyond drawing to not-architecture. Eisenman never states what the signification of *Micromegas* is, never pointing out the elements of the drawing, applying the signification of a wall to an extrusion in the drawing. He sees the drawing as a process, as a disassembly of components. This reading is also apparent in Evans' reading of *Micromegas*. The pieces in the drawing do not have independent signification. If one element is removed, the drawing does not become better or worse, the drawing remains a process, a "contained transitoriness."²⁰

Only through the proliferation of elements do the vectors of components exist. While a removal of one, two, or ten elements may not change the drawing, the removal of all diagonals would leave a lifeless drawing of simple parallel projection. The same would be if only elements with a diagonal pointing to the top left remained. The disruption of parallel projections creates dissonance in the drawing. Libeskind argues for the distance between the internal reality of the drawing and the external reality of the viewer.²¹ The proliferation of directions in the drawing creates collisions in space that never happen. The objects follow the strict order of parallel projection, yet the objects are not completed, making reducing the moments in the drawing to singular objects. The drawing exists in imperfection. Similar to the idea of the viewer completing the fragment, the imperfection of parallel projection captivates the viewer as she tries to sort out a reality in the drawing.

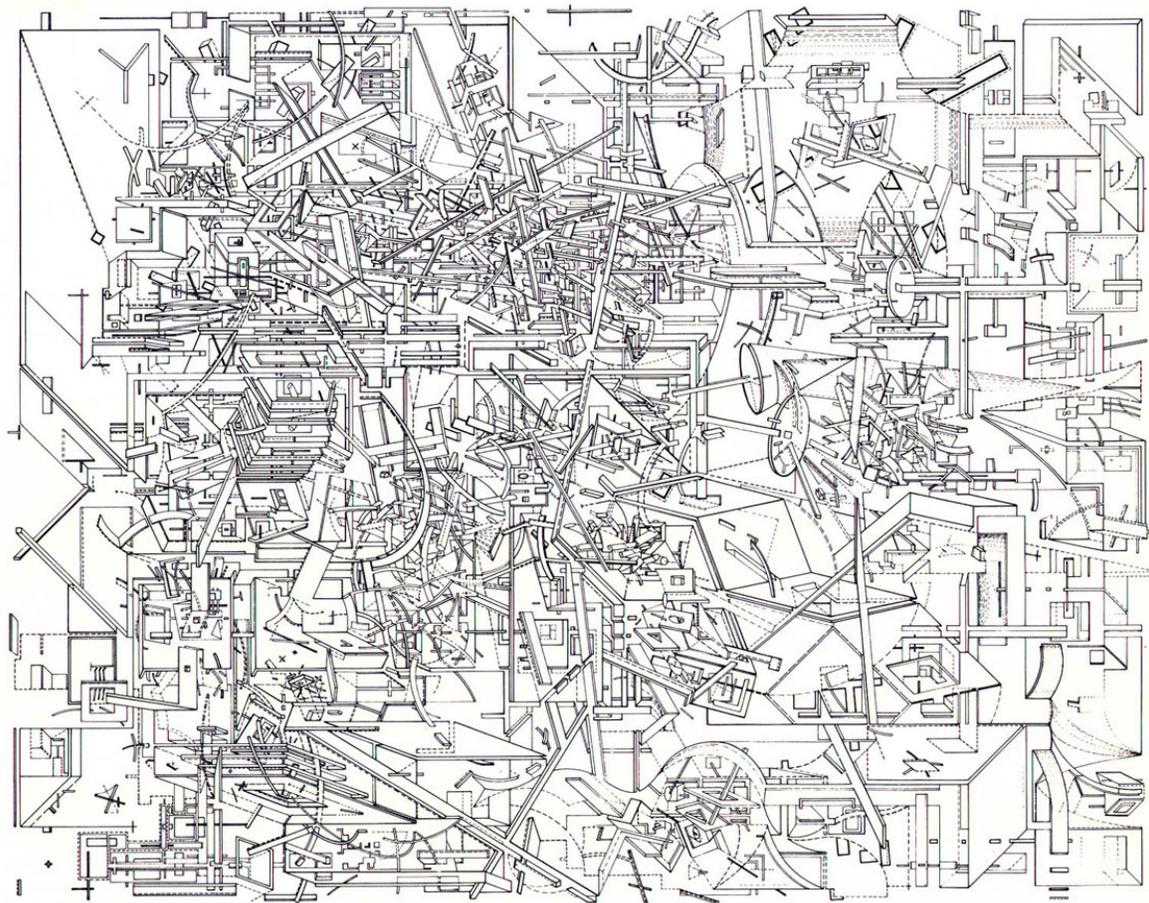
¹⁹ Peter Eisenman, "Representations of the Limit: Writing a 'Not-Architecture'," in *Re: Working Eisenman*, 34-36 (London: Academy Editions, 1993): 34.

²⁰ Peter Eisenman, "Representations of the Limit: Writing a 'Not-Architecture'," in *Re: Working Eisenman*, 34-36 (London: Academy Editions, 1993): 35.

²¹ Daniel Libeskind, *Daniel Libeskind: the Space of Encounter* (New York: Universe Publishing, 2000): 84.

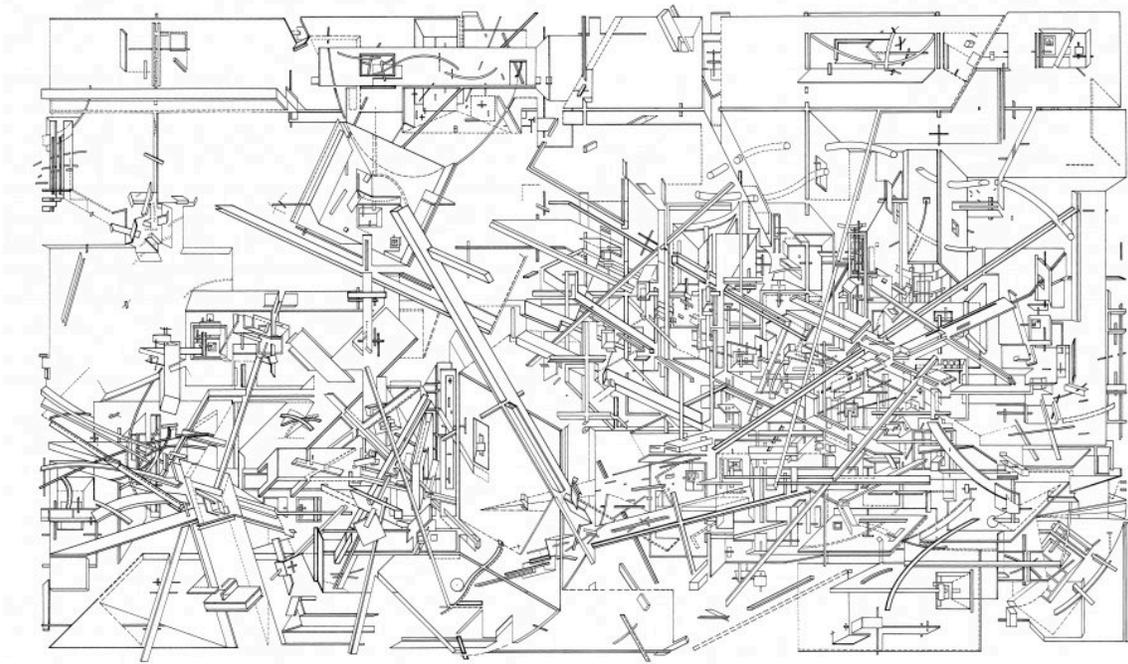
The reality of the external world will never combine with the disjointed reality in the drawing, which creates distance between the two while enticing the viewer to figure it out.

Micromegas is a disorienting, distrustful work. The proliferation of diagonals against orthogonal lines creates dynamism in a simple line drawing. The use of three-dimensional objects in a two dimensional space speaks to architectural drawing, which asks for the drawing to be a step in the process towards building. Libeskind's Chamber Works, while some argue creates a better spatial argument, does not speak to built form as well as *Micromegas*. Rowe and Slutzky's argument of phenomenal transparency speaks to motion and mutation in the drawing. Eisenman's argument for not-architecture also speaks to mutation in the drawing. Libeskind himself sees the objects as vectors, not as lines, a thesis he passed to student Jesse Reiser. As vectors, the lines are a process, not an ending. Seeing the drawing as a process allows leeway in interpretation, as there is no finality, which we can apply to its existence. There are twelve separate drawings, none more important than the other, so again there is no way to apply a greater significance or importance to one drawing over another. The constant motion of the drawing asks the viewer to step in and assert their moment in time to the drawing. Like in phenomenal transparency when the viewer must choose an interpretation, the viewer here must create the part from the fragment herself. She must decide which parallel projection takes precedent at a certain moment. The line drawing, which does not engage the eye through perspective, is engaging because it demands the viewer to project herself into the reality of the off-putting drawing.



Daniel Libeskind, Maldoror's Equation- Micromegas, 1979

Daniel Libeskind, *Daniel Libeskind: Countersign* (New York: Rizzoli, 1992): 29.



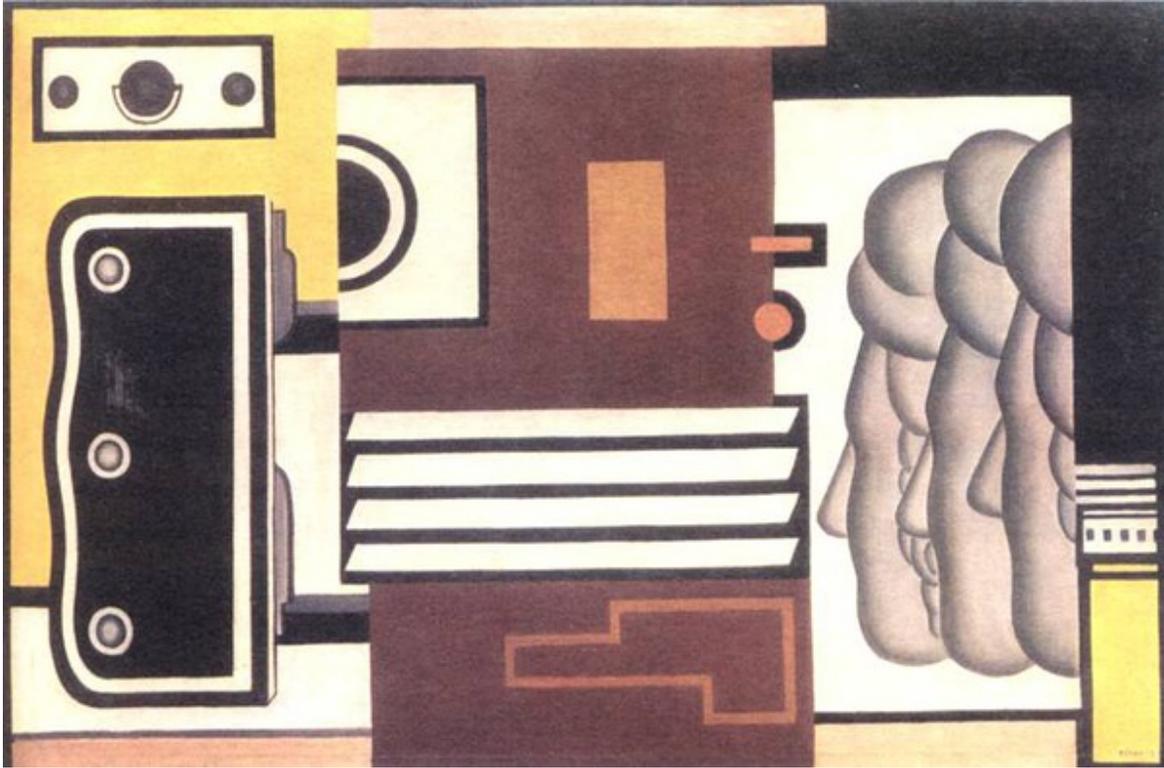
Daniel Libeskind, *Libeskind- Micromegas*, 1979

Daniel Libeskind, *Daniel Libeskind: Countersign* (New York: Rizzoli, 1992): 26.



El Lissitzky, *Proun IC*, 1919

Jennifer A. E. Shields, *Collage and Architecture* (New York, NY: Routledge, 2014): 68.



Fernand Leger, *The Three Faces*, 1926

Colin Rowe and Robert Slutzky, "Transparency: Literal and Phenomenal,"
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