Representing the Undecidable

Michel Tombroff

109 Avenue Kamerdelle, 1180 Brussels, Belgium; michel@tombroff.com

Abstract

This paper analyses the influence of analytic philosophy on conceptual art, as theorized by Ad Reinhardt, Sol LeWitt, Joseph Kosuth and others in the 1960s, and how this influence caused conceptual art to gradually distance itself from the minimal aesthetic conditions required for a democratic experience of the work of art. I then propose to add an ontological model to conceptual art's framework, with the objective of restoring these aesthetic conditions. The ontological model I propose to use is set theory, following the principles defined by philosopher Alain Badiou in his book *Being and Event*. Finally, I present some concrete works of art aimed at empirically testing the validity and coherence of this theory.

« Art as Art » and Tautological Limitations

Conceptual art emerged in the 1960s, partly in reaction to the excess of subjectivity of post-war abstract expressionism. Although one can find indisputable traces of conceptual genealogy in the works of Marcel Duchamp, Kazimir Malevich or Yves Klein, and while one can observe early signs of pure abstraction in the paintings of Mark Rothko and Barnett Newman, it is undoubtedly Ad Reinhardt who initiated the decisive transition towards a purely conceptual theory of art [10]. This theory was derived from the analytic and formalist philosophies of Gottlob Frege and Bertrand Russell and influenced by Ludwig Wittgenstein's linguistic and cognitive research.

Two main orientations emerged from Reinhardt's original impulse. One, promoted by Sol LeWitt, stressed the primacy of the idea of the work of art over its actual realization [9]; the other, supported by Joseph Kosuth, was a tentative to answer the question *what is art?* by means of arguments of logic only [8]. Kosuth substituted for the primacy of the idea that of a formal requirement, by which the artistic activity is reduced to the conception of objects whose main characteristics is their consistency. *Card File*, by Robert Morris (1962), perfectly illustrated this orientation.

This formalization of the practice of art had (at least) two impacts. The first, deliberate and assumed, was the progressive replacement of subjective inspiration by purely formal thought processes, leading to a departure from aesthetic considerations. Where Martin Heidegger characterized art as *revealing a truth that allows us to grasp an essential dimension of being* [7], and where the essentialist and platonic traditions of art had prevailed until then, cognitive and usage considerations took precedence. Conceptual art became "tautological", i.e., always true by definition, regardless of its representation, projection or interpretation. As Michael Thompson wrote, *Kosuth's final statement in his lengthy and complex essay is that art is a tautology: "Art's only claim is for art. Art is the definition of art"* ([11], p. 153).

It is possible to produce an infinity of tautologies, such as $1 = 1$, $(p \rightarrow q) \leftrightarrow (\sim q \rightarrow \sim p)$, *Five Words in Blue Neon* (Figure 1a) or *One and Three Chairs* (Figure 1b). But supplementing a collection of existing true statements with additional tautologies does not increase our knowledge of the system. This is what I call the "tautological limitations" of conceptual art.

The second impact is caused by the side effects induced by the analytic formalization of conceptual art, namely the limitations derived from the incompleteness and undecidability theorems discovered and proved by Kurt Gödel [6] and Paul Cohen [3]. If conceptual art must comply with the syntactic discipline of a formal language, whose objective is to produce "art theorems", we are naturally led to confront questions

of semantics, of model, and of interpretation. Questions such as: What type of truth do these artworks represent? Are there limits to what can be represented by conceptual art? What are the aesthetic consequences imposed by conceptual art's tautological limitations? Etc.

Figure 1: (a) *Five Words in Blue Neon (1966)*; (b) *One and Three Chairs (1965), by Joseph Kosuth.*

These questions reside at the intersection of language, art and philosophy, and combine objective arguments with subjective affects. The conjecture that I pose in this paper is that extending conceptual art's framework with an ontological foundation may help address these questions and, at the same time, produce some renewed aesthetic experience, without thereby betraying what is the essential premise of conceptual art, i.e., the concept. The foundation that I propose for this task is set theory, as elevated to the status of ontology by Alain Badiou in *Being and Event* [1].

Set Theory, Ontology and Conceptual Art

Set theory was invented in its naive form by Georg Cantor at the end of the 19th century [4]. Then Ernst Zermelo, in 1908, established the theory in its axiomatic form [5]. The theory allowed to resolve some of the major uncertainties that had weakened mathematics, in particular the questions related to the nature of infinity and antinomies.[1] As Badiou pointed out, Cantor's creation represents *a critical break, where mathematics pronounces its own essence. Only then is it made absolutely clear that, whatever the prodigious diversity of mathematical objects and structures, they are all represented as pure, constructed, organized multiplicities, emerging from the empty set* ([1], p. 12).

It is impossible to summarize Badiou's theory in a few paragraphs, and I refer the reader to the dialogue between Badiou and Gilles Haéri in [2] for an informal introduction. Let me just say that Badiou defends the thesis that *mathematics is the science of being-as-being, that is, ontology, that is, the independent study of all the possible forms of multiplicity as such, of all multiplicities, and therefore of all that is – for all that is, is in any case a multiplicity* ([1], p. 78). Starting from this platonic and audacious position, Badiou revisits Gödel's and Cohen's results and develops a theory of the immanence of truths that he then applies to the domains of science, politics, love, and art.

Badiou then shows how new knowledge and truth emerge, not from the mechanical production of theorems derived from axioms, but from the activism of scientists, rebels, lovers, or artists who decide to militantly add undecidable propositions to an existing situation (scientific, political, romantic or artistic.)

Translated to the case of conceptual art, the role of the artist is therefore to transcend its tautological limitations and to produce undecidable propositions, in the form of works of art. My conjecture is that the addition of an ontological pedestal to conceptual art's framework will inspire and facilitate such artistic productions, and that Badiou's model, based on set theory, is well suited for this task.

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[1] E.g., Russell's antinomy, the question regarding the existence of the set of all sets that do not belong to themselves.

e, π, and φ

I started my project by focusing on set theory's most intuitive and elementary objects, i.e., numbers – natural, real, transcendental, prime, etc. The objective of the works of art presented in this section is to extract the "essence" of these objects, through the juxtaposition of distinct representations.

The Number e

The two panels shown on Figure 2 illustrate distinct representations of *e*. The frame on the left represents *e*'s first 5,301 decimals, each digit being materialized by a wood stick whose length (in centimeters) represents its value. The right panel presents a curve, also assembled from wood, that levitates a few centimeters in front of the black background. The curve is e^x, the exponential function.

Figure 2: *e (2017). Two wood panels (120cm x 80cm each), acrylic paint and wood sticks.*

The Number π

Similarly, the two panels shown on Figure 3 illustrate distinct representations of π. The panel on the right represents π's first 5,476 digits, while the panel on the left presents a circle, made of wood, that levitates in front of the black background.
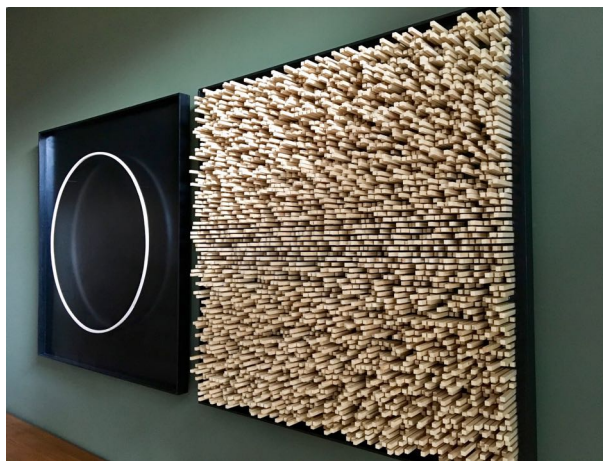
Figure 3: *pi (2017). Two wood panels (100cm x 100cm each), acrylic paint and wood sticks.*

The Number φ (The Golden Ratio)

The two panels shown on Figure 4 represent φ's first 6,955 decimals. The dimensions of each panel, the size of the "hole" in the left one, and the size of its "positive" in the right one, all correspond to the golden ratio proportion. This artwork is called *Sectio Aurea*.

Figure 4: *Sectio Aurea (2017). Two wood panels (80cm x 120cm each), acrylic paint and wood sticks.*

Conclusion

I have always been fascinated by abstract art, in particular conceptual art and minimalism. But I could not explain what, in an artwork from Barnett Newman or Donald Judd, for instance, caused me to experience such aesthetic pleasure. The reading of Alain Badiou's philosophy changed the way I apprehend conceptual art, and I therefore decided to explore how it could affect my own artistic production.

This paper is an attempt to share this study with others, with the hope that it will arouse the reader's curiosity. I am excited to start the next phase of my work because I foresee, beyond numbers, endless sources of inspiration in the abstract objects and structures of mathematics. My future work will focus on more abstract topics of set theory, in particular the notion of the empty set, cardinality, well-ordering, forcing and, finally, the axiom of choice and the continuum hypothesis.

References

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