WALKER   the Gradient

"…meet the Tetracono": An Interview with David Reinfurt

"The art of the past has accustomed us to seeing nature as static: a
sunset, a face, an apple, all static. People go to nature looking for
images such as these static things, whereas an apple is in fact a
moment in the process from apple-seed to tree, blossom, fruit." –Bruno
Munari (*Design as Art*, 1966)

In 1965, Italian artist and designer Bruno Munari created the Tetracono, a 15-cm
black steel cube with four aluminum cones that spun at four distinct speeds on a 18-
minute cycle. The product's function was to "show forms while they are in the
process of becoming." Applying Munari's ideology that "it is not research that should
be purposeful, but its results," designer, educator, and publisher David Reinfurt
recently spent six months as a fellow at the American Academy in Rome researching
and experimenting with Munari's product-artwork, unsure of what might follow.
Shortly upon his return to New York City, I spoke with Reinfurt about his research
and how the Tetracono can act as a model for thinking through larger questions
surrounding design, art, and the often grey areas in-between. Over the course of our

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Aryn Beitz

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many conversations, it became clear that Reinfurt's design research around the Tetracono is not close to finished. He explains, "As long as further digging continues to suggest new making, I will continue." Already, he has an event planned at the Picture Room in New York City and a lecture at MIT, among other projects.

ARYN BEITZ (AB)

Hi David. What initially lead you to the American Academy in Rome?

DAVID REINFURT (DR)

I was ambiently aware of the American Academy in Rome since graduate school. Michael Rock (a teacher) was a fellow at the Academy and since then, I've known several others. Six months living on the top of a hill in Rome with time, community, and, umm, food, as you might imagine, was compelling. It's also one of the only such prizes in design. The Academy is radically welcoming to families given that it *is* a residency fundamentally and partners are integrated into the communal life as "Fellow Travelers." Anyway, it was a tremendously long shot which just happened to work out. It is a gift that I will inevitably appreciate even more over time. Here are a few pictures of the studio, whose volume, as it turns out, was a perfect cube:

1/2

AB

Did you know from the start that you wanted to focus your research on Munari's Tetracono? Was it his background as a graphic designer that was most intriguing or rather his overall process of making—be it graphic design, art, industrial design, etc.?

DR

Application to the American Academy is competitive, and a specific project proposal is central. So, yes, in that proposal, I did develop the idea of focusing on this one work by Munari. Originally, however, I also said I'd be using the product as a point of contact between two figures: Bruno Munari and Adriano Olivetti. Below is a short description of my original project just because it may be interesting for how it narrowed later:

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I would like to spend six months at the American Academy in Rome
imagining, writing, and recording a conversation between Munari
and Olivetti. Munari was an artist who made a concerted, ethical
shift towards design, while Olivetti was a businessman who
switched his focus away from financial gain to imagine a
corporation whose cultural obligations were paramount. Both
upended the expectations of their respective disciplines and, in
the process, expanded what was possible and necessary within
them. This imagined dialogue would form the basis of a short
video of approximately 20 minutes. The visual would consist of a
real-time shot of Tetracono, a work by Bruno Munari from this
period. Tetracono is a product-sized artwork made of four cones,
each painted half-red and half-green, and attached to four
motors. Each turns at a specific speed, and the resulting image
is one very slowly turning composite color which moves from
green to red on an 18-minute cycle. The choreography of this
transition would be reflected in its accompanying conversation,
as Munari and Olivetti discuss and develop how art might jigsaw
with industry to produce a cultural dividend.
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When I arrived in Rome and started looking into Adriano Olivetti, I quickly realized what a sprawling topic he was personally, much less Olivetti as a corporation. It wasn't immediate, but as I started to work it became clear that what I was most interested in was simply the Tetracono itself.   I had previously looked into this work in the context of an article I wrote and published for The Serving Library. This text, "c. 1962" itself evolved from a lengthier investigation which started with Munari's connection to an exhibition at the Olivetti typewriter showroom in Milan. *Arte Programmata* was organized by Munari together with Giorgio Soavi of Olivetti and writer Umberto Eco. That show also initiated the use of a novel term, "programmed art," for constantly variable, often kinetic, art works which although appearing to be random and constantly variable, were in fact, constituted by carefully constructed programs (or plans, scripts, limits, what have you). These works began to appear right around the same time that Olivetti began to manufacture computers.

"Programming" (computer and otherwise) was anyway in the air as a term to describe a kind of intentional, variable action within prescribed boundaries. The exhibition sparked an interest in Munari's relationship with Olivetti and with this movement at large, which then led to a performative slideshow delivered with two overlapping metronomes and other audio-visual props that I delivered at the New York Art Book Fair. I arranged to give that same slideshow exactly one year later (in the same room, same time at the book fair). Of course the second time it was a complete train wreck. The first time I barely knew what I was talking about while a year later, I likely knew everything too well. The slideshow became bloated and too authoritative. It was a good reminder that work in progress is much more interesting to think about than

work that is already complete. (Luckily, I have no real idea where this Tetracono research will lead next and I guess I'm willfully indecisive about what's next.)

AB

Munari often said, "It is not research that should be purposeful, but its results. In other words, let me play, then we will see." You seem to have embraced this ideology throughout the course of your research. Have you found this approach useful and/or practical?

DR

I suppose I find that approach natural, often practical, and consequently useful. Useful in that the research inevitably leads to making work, especially when it is approached with some degree of self-consciousness. This may sound funny, but I think that being aware of yourself in the moment and acknowledging (to yourself at least) that what you are doing is *also* performing the job of research can be quite useful. For example, shortly after arriving in Rome and through a network of connections facilitated by Rob Giampietro, former design fellow at the American Acedemy in Rome, and Davide Fornari, director of research at ECAL (Lausanne), I was in touch with a collector of 20th-century Italian design who not only had a Tetracono but also was willing to let me work with it. The collector, Andrea Moscardi, was quite generous with his time. He invited me to Milan to see the Tetracono and picked me up from a metro station in the northeast. From there, he drove me out a good bit farther to where he stores his collection. We passed the grayer, more industrial parts of Milan, until Andrea parked and we went together into a rather large, not exactly sparkling apartment tower. He led me in through a small back door, into a strange courtyard, and down a level until we arrived at this basement door:

It didn't look to me like the front door of a substantial collection of 20th-century Italian design, and it crossed my mind that my residency in Italy might end earlier than expected. It also immediately occurred to me that I had traveled from New York and one basement (my studio) to another, and the whole trip might have been more easily facilitated by a tunnel (metaphorical or physical):


Walking into the basement in Milan, I found this:

A perfect jewel—the compact 15-cm cube was rather more striking in person than I was thinking it would be. This one was static, however, produced without the motors which spin the cones at their programmed speeds. I had arranged all of this so that I could make a series of photographs of the Tetracono with its cones in the various positions which I would then animate after-the-fact to produce a video of the machine in motion as Munari intended. Here is what the setup looked like:

I overlaid a grid which I'd worked out for where the cones were supposed to be when and then used fine motor skills to very slightly move each cone to its new position for a new picture:
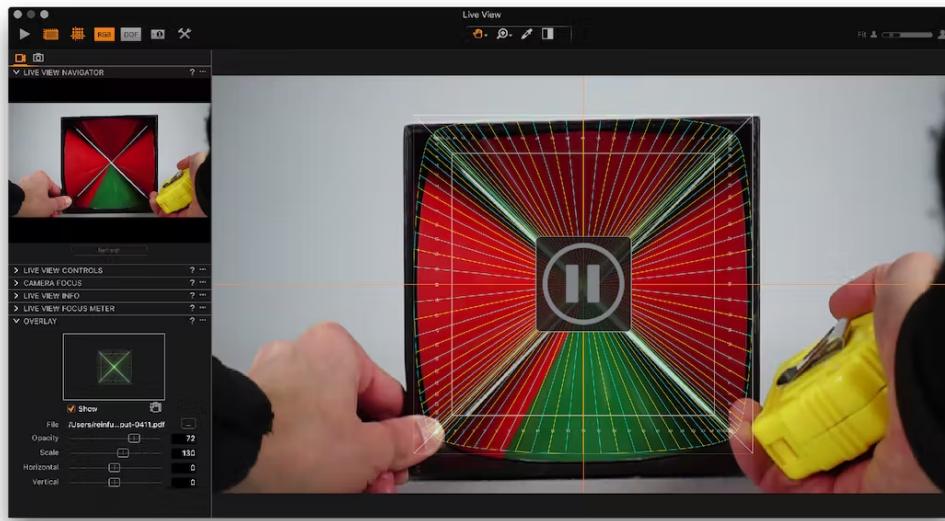
The resulting raw material:
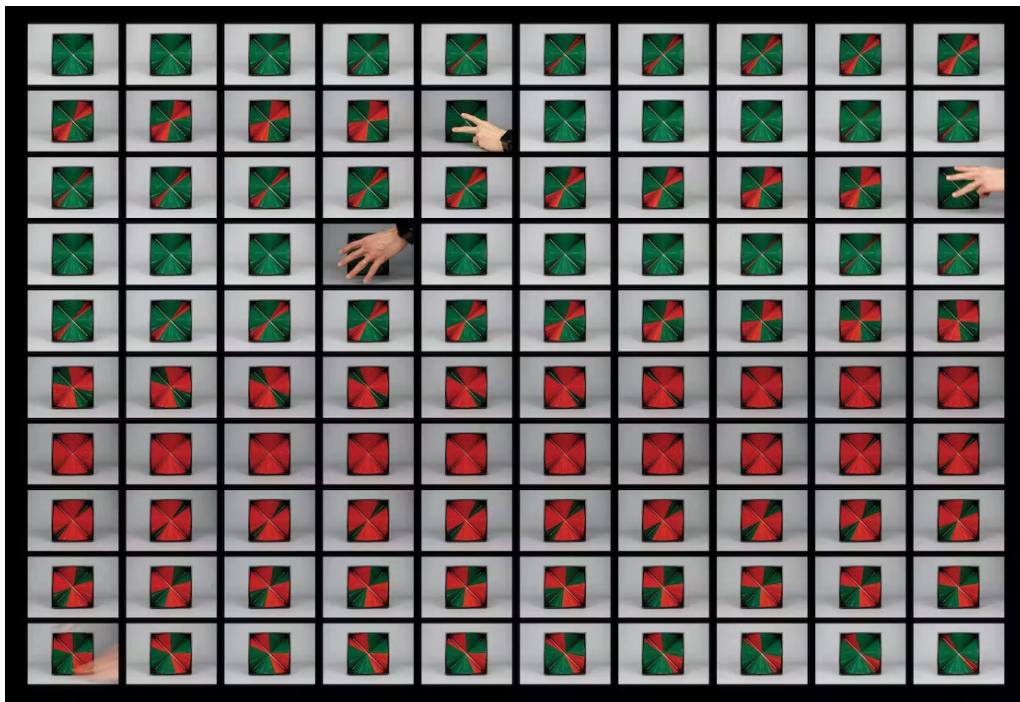
And from that I reanimated the Tetracono. Here is an early sketch version:

Meet the Tetracono

As all of this was happening I was also well aware of the absurdity or, anyway, the unlikeliness of what I was doing. I think that being aware of that fact also helps me to treat this work as the serious play that it should be. It also encourages a certain kind of

looseness that lets the research lead where the research leads, in a more lateral, more freely-associative, or empirical manner. This must be what Munari was suggesting in what you quote. One thing I've realized, however, is that in every case, Munari manages to express complicated thoughts in an utterly simple way.

AB

Munari was constantly investigating language, whether it was visual or cinematographic. The Tetracono was a sort of programmed art that was based on experimentation and non-subjectivity, in accordance with a scientific method that took account of technical aspects and psychological data concerning perception. You've experimented with similar programmed works in the past. What is it about programmed art that you find most interesting? How does it relate to your design practice?

DR

Programmed art, aside from potentially being an oxymoron, is also simply fruitful for me to think about. It must be the tension that it holds in place between what appears to be a random sequence of events and the underlying script that directs the action and defines its limits. This controlled play resonates with me, and perhaps that is specific to my orientation as a designer. Long ago I drank the designer Kool Aid that suggests that *limits (constraints) are also opportunities* and that embracing these can make work that is inevitably more alive. I need these checks, and when left without, I can't make work. When these are not directly in the situation or problem, I end up either inserting or inventing them. So programmed art connects with my disposition.

Bruno Munari, in his studio with programmed artworks, Milan, c.1962

In *Design as Art* (1966), Munari described the Tetracono as "object produced on a small scale for the purposes of programmed art." So, in a way you can imagine that the product-artwork is also something of a tool for thinking about programmed art. The Tetracono's double status as an object and a tool is compelling.

AB

You describe this project as "design research." What constitutes design research today?

DR

Munari described originally the Tetracono as design research. Usefully he also provided a working definition of design research at the time. This is from *Codice Ovvio* ("Obvious Code!" What is possibly a better title for a designer's monograph?)
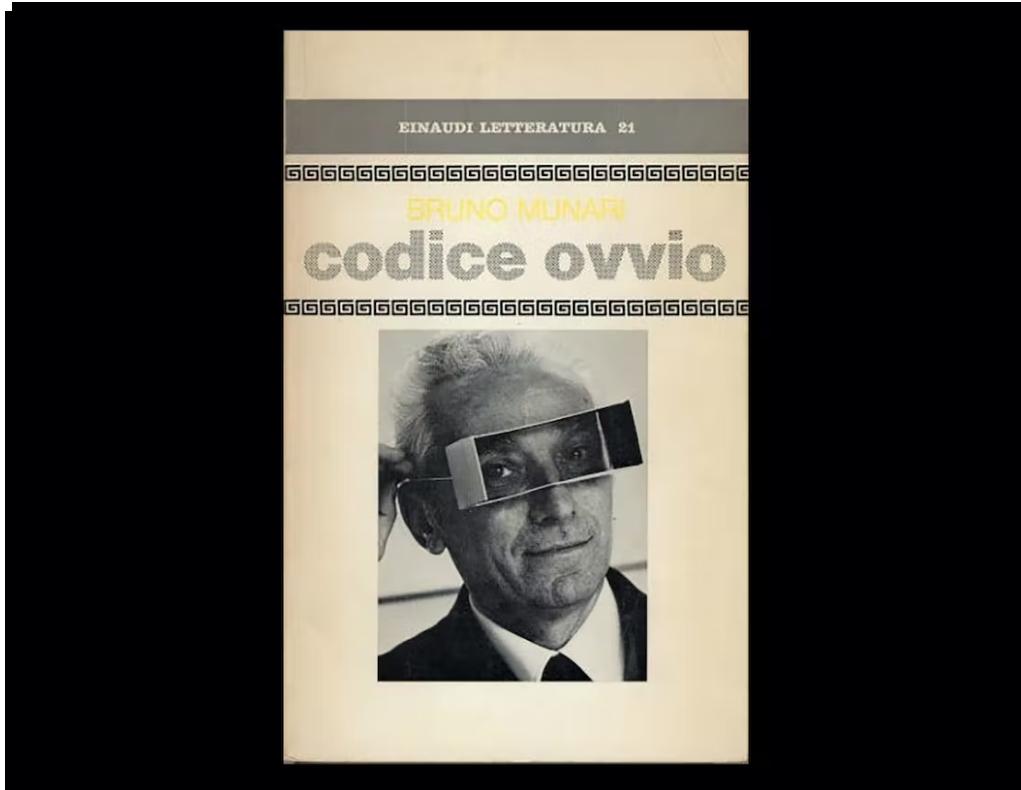
Well, here is Munari on design research and in particular how it gives rise to works produced in multiple copies (the Tetracono is an arch example):

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How to design (multiples) … Multiples are designed with the
methods of research. Unlike the artist, the designer does not
make a wonderful sketch and later find some reproduction
technique. He experiments on a phenomenon which is optical,
physical, geometrical, typological, mechanical … He refines the
elements of communication, and studies the best material with
which to produce the object for the maximum level of visual
communication and the minimum level of cost. He finds the
mechanical technique which best suits his purposes, and in the
end a prototype is born — not a unique artistic creation, but a
model for the creation of a series. Reproductions of artwork are
always inferior to the original, but when designing a model for
mass production, the prototype is always inferior to the final
products.
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Of course that was then and this is now, 50 years later. I described my project as design research, and for me that simply meant that it was compound. Yes, it is a research project and, yes, it is a design project. In this case, it was a combination of historical digging as I attempted to learn more about the object and its context while working in parallel actively making objects, graphics, software.

The historical work turned up some fascinating and unexpected notes, and the material I found then encouraged me to make things. For example, I found the original copy of this document which details how the Tetracono goes together:
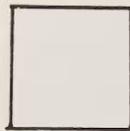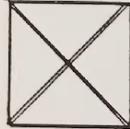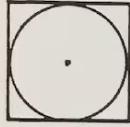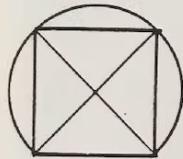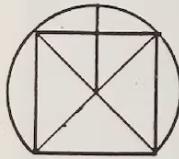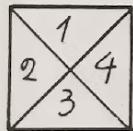
From this diagram, I made a half-size paper model and left the construction lines intact (here in process):

1/3

Building the paper model led me to deeper research around the Tetracono's geometry and where it originated. Turns out, surprisingly, there is a concrete answer.

As these things go, Rob Giampietro introduced me to Davide Fornari. Davide was very helpful in connecting me with people around this research. He has a previous deep interest in *Arte Programmata* and organized a project including an exhibition, workshops, a catalog, and a comprehensive website here. Davide arranged and facilitated an interview with Giovanni Anceschi.

Anceschi was a founding member of Gruppo T (an artist collective based in Milan who were the principal artists included in the *Arte Programmata* exhibition). After a bout of early success as an artist, Anceschi went back to school to study design at Ulm. He was a full generation younger than Munari, but the two had an active conversation around the time of the Tetracono. It seems that Munari was a mentor of sorts. Anceschi returned from Ulm to Milan one weekend with ulm 7, the school magazine. Its cover featured work from a design research project by ulm Professor Walter Zeischegg investigating the formal combination of cubes and cones in various configurations. Here is that cover featuring a work called *Conosphere*:

1/3
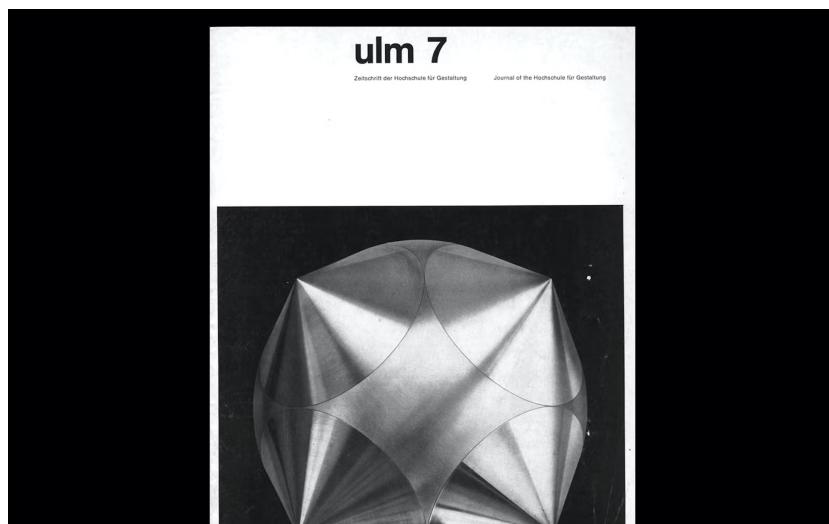
Anceschi showed it to Munari who was excited (as was Anceschi). From that image, Anceschi imagined a cube with six cones each protruding from one face of the cube. Each cone would be created by the circular rotation of a single bent wire. He called it the "Esacono" (6 cones). Turns out it wasn't feasible to build the idea. Munari, however, simply shaved off two cones, changed the prefix from "esa" (6) to "tetra" (4), pointed them inwards, and merged this essential geometric insight with his simultaneous interest in programmed art. The resulting mashup, an inside-out, kinetic *Conosphere*, is the Tetracono.

Now my "research" evolved in a distinctly cyclical fashion and led me to the manufacturer and seller of the Tetracono. Danese Milano started as a small "design gallery" and worked with Munari intensely from the beginning, designing products, multiples, graphics, prints, even choosing what other artists and designers Danese should represent, designing the showroom, and staging exhibitions. It was in the Fondazione Jacqueline Vodoz e Bruno Danese (which houses the archives of Danese Milano) that I found the original of that Tetracono construction drawing. In the interview with Anceschi, I found out that the Tetracono was even manufactured in the Gruppo T studio that Anceschi shared with Davide Boriani. There was no real drawing, but rather the size and form was verbally communicated by Munari to a lathe operator in the studio. As far as I can tell it was made without proper drawings; the drawing I was working from was most likely made after the fact as more of an illustrative diagram. Anyway, all very circular.

Product sales booklet for the Tetracono, 1965, as found in the archives of Fondazione Jacqueline Vodoz e Bruno Danese, Milan

AB

Time, or work that plays out over time, is a recurring theme in your work. Why is time and working in cycles so important to your practice? How does it relate to Munari and his process?

DR

Yes, time has been both a subject matter and criteria (possibly a quality) of my work since I finished graduate school in 1999. My first year in the graphic design department at Yale University we had to present a thesis topic. I announced mine would be "time." It's a great way to sound like a proper idiot given the subject's all-encompassing range—I could've just as easily said my thesis was about "the world." But, I stuck fast to the topic, and over the course of two years, although it garnered a few blank stares along the way, the thesis also produced work I still like now, 20 years later. My title, "Temporary Thesis," was a way to have a subject matter which is always under revision. This sounds like an easy out, but it was instead just a way to be direct about working in a permanent state of flux. (I guess now, you might say "flow".) I even said that I went back to graduate school for time, so again, it was a circuit. I suppose I simply like things that change and like things even better that have been designed to accommodate the inescapable fact that they will. (Nobody really believes they will die, either.)

Design is necessarily a projective act, about how the world (usually some tiny part of it) could be better, more logically organized, more coherent, more enjoyable. But as soon as you are done, the thing you have poured that effort into is going to change. This fact becomes more immediate when it's digital media. I expect this is also more or less a personal preference—I like things that are moving. And that applies most stridently to my design practice. Whether working alone as O-R-G, together with Stuart Bertolotti-Bailey as Dexter Sinister, or with Angie Keefer, Francesca Bertolotti-Bailey, and Stuart as The Serving Library, the question for me is ALWAYS "how to keep things moving?"

Letter & Spirit

Dexter Sinister

18:30

Since I have a finite set of interests and they're pretty consistent over the years then I find that movement tends to go in circles or... or maybe it's not so much circles as it is a random walk. It's what's called the drunkard's walk (or more technically, Brownian motion) and it describes a random path where each next step is undetermined but the overall pattern over time orients itself around a center point. For the drunk, that center is a lamppost:
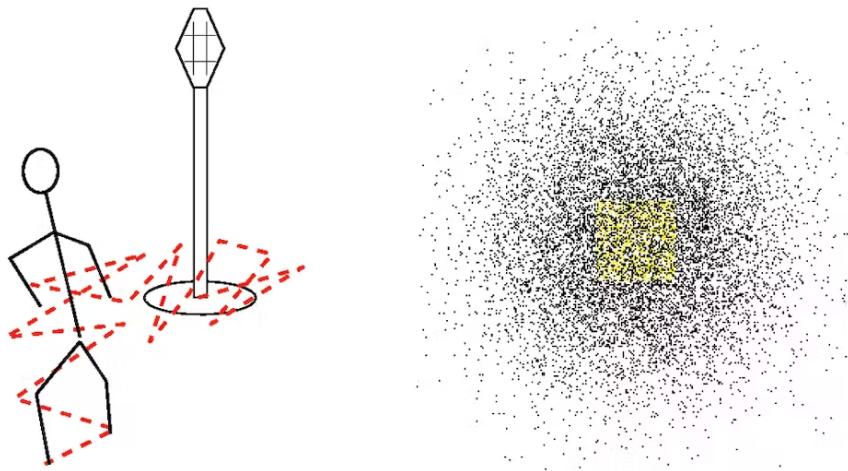
Anyway, for me it is a kind of circling around a core of concerns. These interests change depending on if I'm working with other people, or in some unique context and it might be a boozier walk that strays farther from the center. Eventually I seem to stumble back to my central ideas. Cycles are less an aesthetic preference and more simply, a consequence of keeping things moving. And for thinking about cycles, I could hardly ask for a better model than the Tetracono.

AB

In a recent lecture, you describe the Tetracono as a useless, yet important, piece of work. Can you elaborate?

DR

I don't see a contradiction between useless and important. If you take the idea that art is distinguished by its uselessness, then a work's importance can be multiplied by its uselessness.

AB

While in Rome, you discovered that one of Munari's restored Tetraconos was not functioning according to his design. How did setting back the work to its original intent impact the remainder of your research?

DR

First, I should say that there are two versions of the Tetracono. The first one was 20 x 20 cm, made in an edition of 10, with motors. The second was smaller (15 cm), made in a run of 50 copies, and without motors. The motors in the first edition never mechanically worked very well, and the product was too expensive. It was a commercial flop, if a conceptual thunderbolt. The second edition, called Tetracono SM ("SM" stands for *senza motore*, or "without motors"), worked a bit better as a product, although the fact that it didn't move seems to contradict what I like so much about it. I'm ok with that.

About four months into this work I returned to the Fondazione Jacqueline Vodoz e Bruno Danese in Milan. They had a working version of the original motorized Tetracono as well as a Tetracono SM. I had never seen one in movement up to this point, but had studied its patterns on paper, and prototyped it in software as a screensaver.
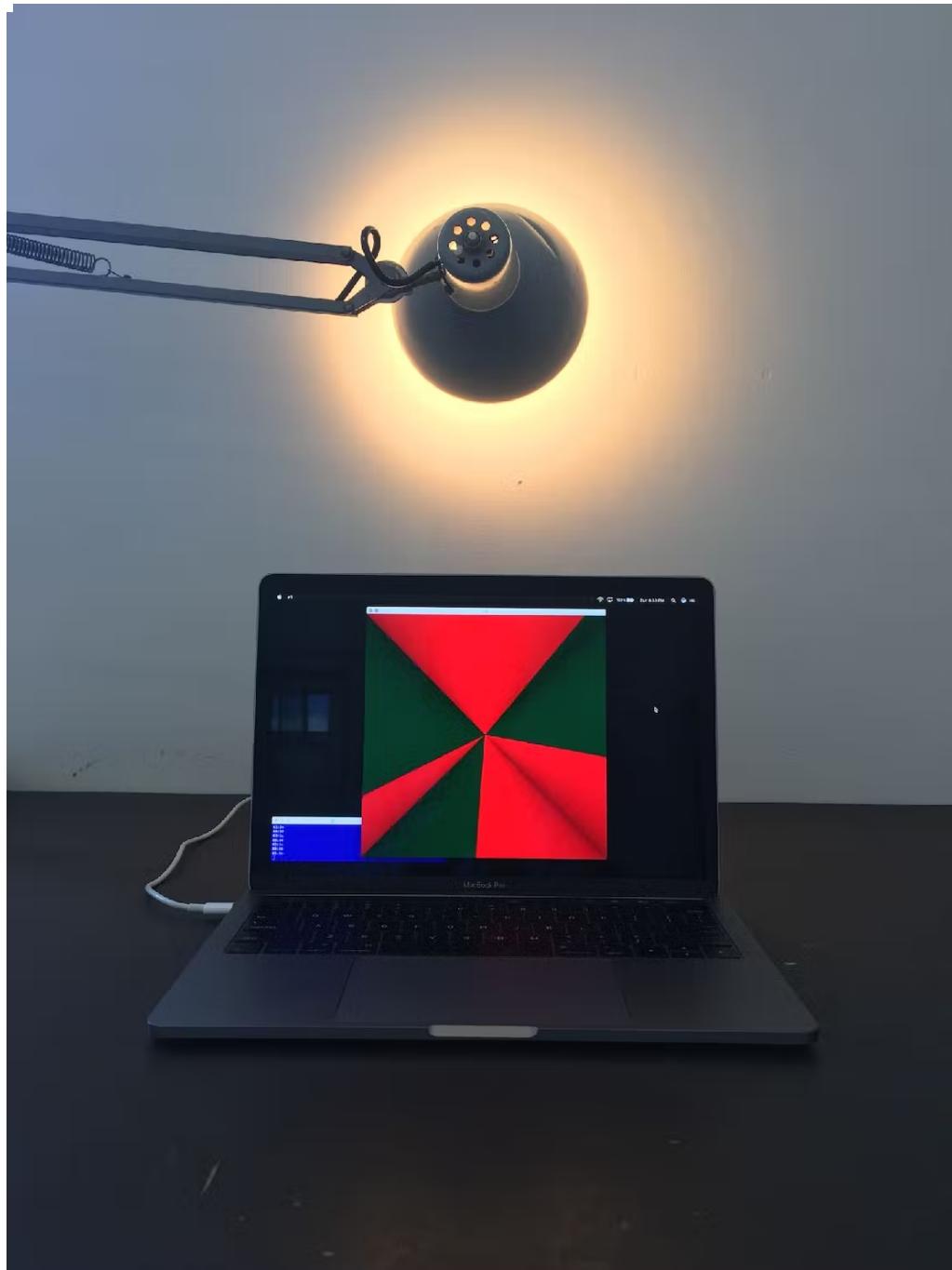
Tetrocono software model

Dexter Sinister

18:00

⌈   ⌉

I was excited to see a real one move. Manuela Cirino met me at the foundation and pulled down the boxes down from the shelf. Then we proceeded to look around for the power cable which was missing, of course. We never found it that day, which is too bad as I was very excited to see this thing moving for the first time. Well, after I left, riding on the train back to Rome, Manuela found the cable, plugged it in, and the Tetracono began to move. She shot a quick video on her phone and texted it to me; I got it on the train. Immediately I saw the rates for it were off and even one of the cones was spinning in the wrong direction! Turns out it worked and then was renovated in order to be shown at the Museo del Novecento in 2005. Something was wrong.

## il Tetracono in Fondazione Jacqueline Vodoz e Bruno Danese

Dexter Sinister

01:02

Manuela was able find the relevant records, and it turns out that she knew the person who had "fixed" the Tetracono. Together we reviewed the documents I had found, consulted my software model, looked at some old CD-ROM video of Munari discussing the Tetracono, and were able to conclude that, indeed, it had been "fixed" *wrong.* Manuela was then in contact with the company (her friend who did it had since retired), and asked if they might fix it again back to Munari's original intention. Generously, 13 years later the company agreed to do the work. It's happening now. Here is a picture from the original "fix":

Tetracono di Munari, smontato per la revisione dei motori
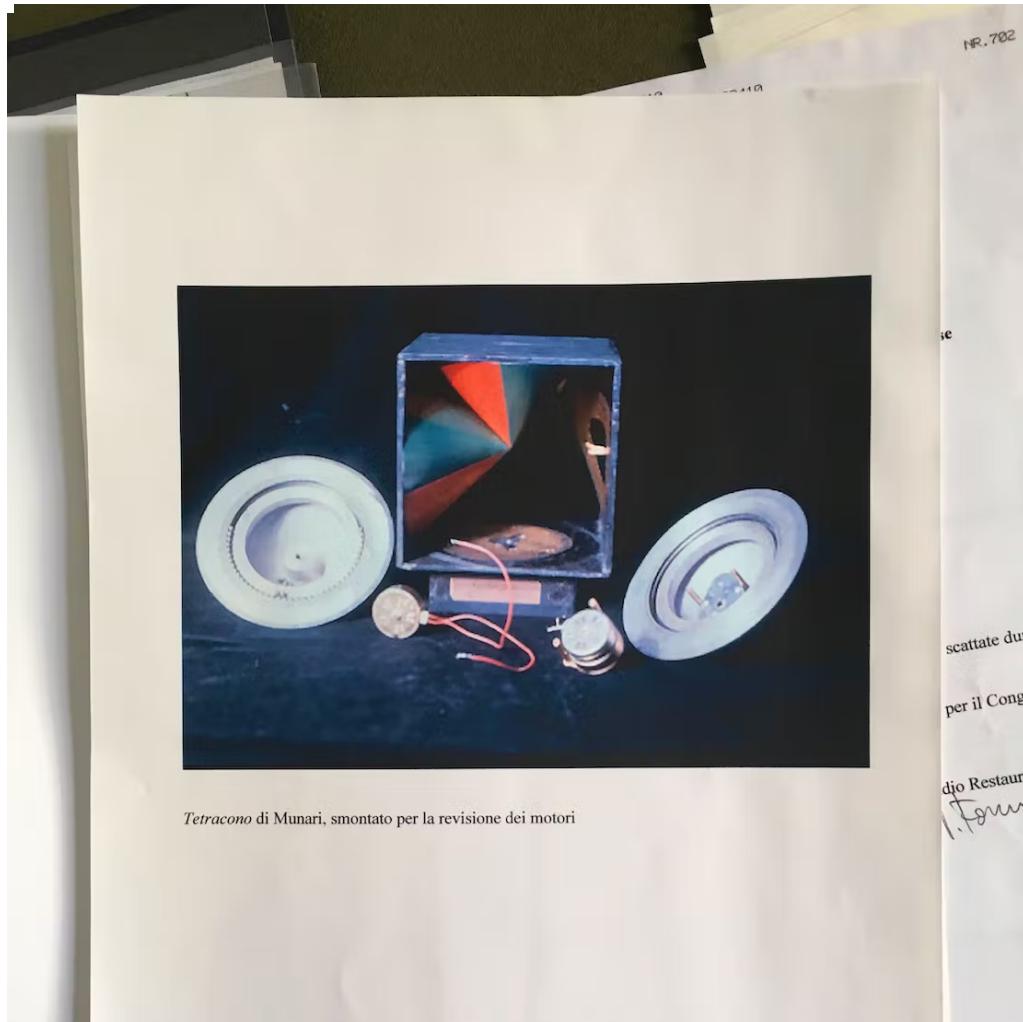
AB

Has reincarnating the Tetracono brought to light the grey areas between art and design?

DR

I like the idea of "reincarnating"! That's certainly a cycle … Anyway, yes, throughout this research, I have been wading through the grey areas. In addition to the cyclical patterning of the Tetracono, I was also drawn in by its status as something between and artwork and a product.

The story goes that Bruno Danese was already running a successful "design gallery" in Milan selling handmade ceramics and other one-offs when he approached Munari in 1957 to do something with him. Munari responded by saying he would only if it was an industrially produced product, insisting that this was the only real contemporary option. Munari designed and Danese produced and sold the Cubo ashtray that same year. It was also a commercial failure at first, but Danese persisted and it is still manufactured 50 years later. I bought one in May, and on the package it says, "Is this perhaps a classic?"! Yes, clearly.

From that start, Munari worked closely with Danese to develop the ideas of artists' products or multiples, but not as a separate line from their exanding range of table top items, lighting, etc. Danese Milano made no distinction between their artists multiples and the more practical or typical products. So, in the showroom (often also designed by Munari), there might be a Cubo ashtray sitting right next to a Tetracono SM. Useful to useless is not a binary:

1/2
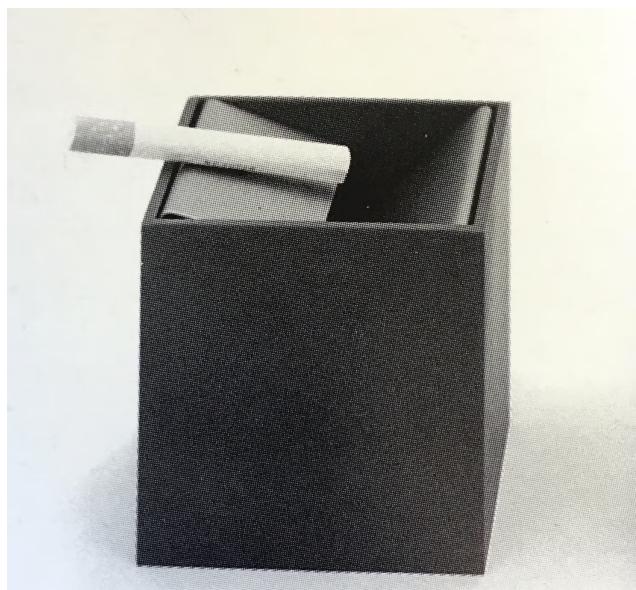
obacco ashes alone on a pretty litt

Again in *Codice Ovvio*, Munari concisely described how he saw this grey area when making an artwork that exists in multiple copies (like the Tetracono) as well as when making a more conventional product (Cubo) which also exists in multiple copies. Both are the fruits of a design process:

> Serial production is not reproduction. Reproduction implies that
> there is an original 'unique piece' which, as such, cannot be
> reproduced, but which production techniques try to imitate as
> closely as possible. Therefore the reproduction is always
> inferior to the original, and its main function is
> documentation. On the other hand, production uses the techniques
> which are available to the artist today to manufacture a given
> number of pieces (not copies), without the existence of an
> original, which can be the same or slightly different, depending
> on the methods of production, design, planning, etc. […] The
> number of pieces produced varies according to the techniques and
> the subjects involved, from a minimum of fifty, to an unlimited
> number in order to obtain more reasonable prices. Only those who
> mistake price for value are not interested in this type of
> production.
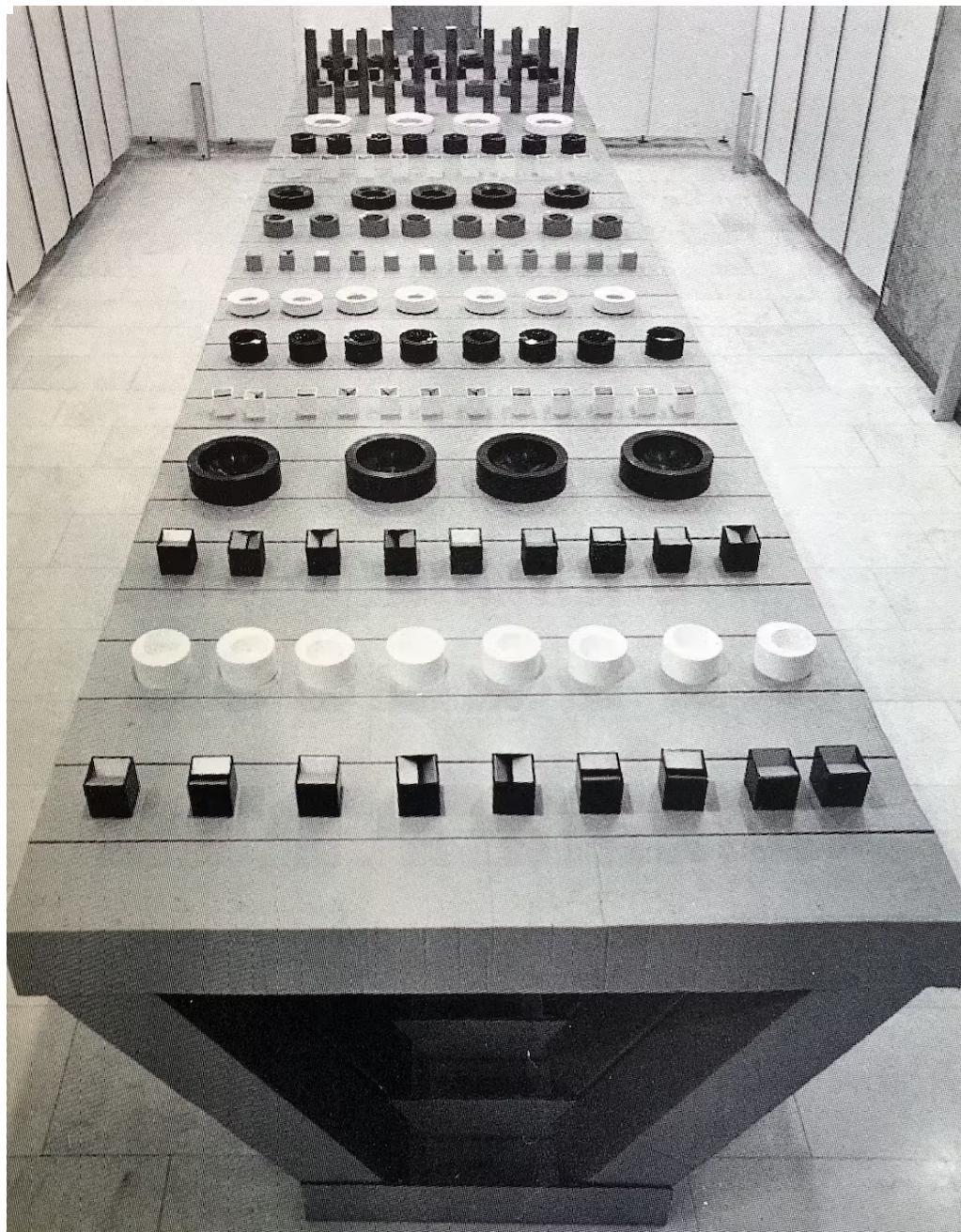
Showroom display with products, Danese Milano, c.1965

AB

In your opinion, what is the difference between art and design? Design and innovation?

DR

Well, to take the last part first—I am pretty sure that "innovation" is mostly a lazy synonym for design which, most often anyway, ignores the rigor, process, and research aspects of design. "Innovation" is a shiny word, and it is telling that it also implies (and incorporates in its linguistic roots) newness. I hardly think that newness

is a useful criteria where design is involved. Newness is great if we are talking about yogurt at the supermarket, but I think it ends there. This sounds more emphatic than I mean it, I'd guess. The word "innovation" is not dangerous; it is just unfortunate when it erases "design." Design is something else more intentional, deliberate, sometimes slower. Innovation assumes an end that is new, disruptive, whereas a design process might and often does end in the decision to do nothing.

I'll leave the art and design question permanently suspended.

AB

I completely agree! Over the course of your graphic design career, you seem to have embraced the notion of using situations as they happen to make new work. What new work will come as a result of your time in Rome?

DR

I think it was five years ago, Stuart and I (as Dexter Sinister) were contacted by COLLI Independent, a gallery, bookstore, and publishing platform in Rome. COLLI asked us to design a poster for an exhibition and we contributed a work called *Watchscan 1200dpi*. The original image, commissioned for a previous invitation, was made by taking a very high resolution scan of my wristwatch. At 1200 dpi, the scanner head moves more slowly than the second hand and so it appears to bend in the resulting image. Red, green, and blue passes of the scanner even register if you look closely.

1/2

The A0 format print was produced at an "industrial artisan" silkscreen printer in Umbria. For obvious reasons, we loved the idea of "industrial artisan" production and that there was no contradiction implied. Anyway, that print hung on the wall in the Salone at the American Academy for most of my time in Rome:

1/2

So, it occurred to me pretty quickly in Rome that it would be great to work with the screen printer again and make a sister print to the Watchscan, exactly the same size, same layout, same paper, etc. This would draw a nice loop. The initial idea was to make four prints of the Tetracono at four different moments in its cycle, something like these:

But then a better idea appeared to combine all four moments of the Tetracono in one print, making a kind of "time sandwich." Four-color silkscreen printing requires four-color separations (cyan, magenta, yellow, black) overprinted to produce the full-color image. So we took the cyan plate from one image, magenta from the next, yellow from the next, and black from the last. Each of the four plates was from one point evenly spaced in the Tetracono's 18-minute cycle. Because silkscreen prints one color at a time, then the image would build up over the printing time and we had no real idea what the result would be.

1/4
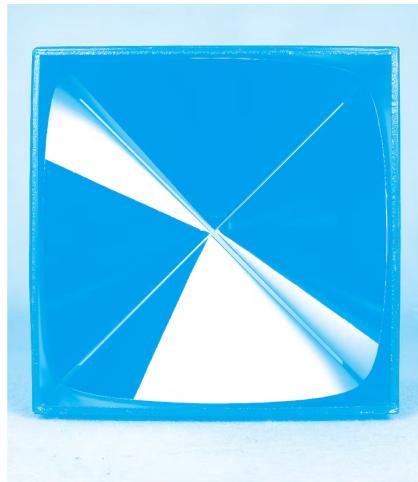
CYAN

1/6

Artisan-Industrial screenprinter, Foligno, Umbria

We called the print "Stampa Programmata" or "programmed printing" and it was the basis for a Dexter Sinister exhibition at COLLI Independent that opened in June. Here are a couple of pictures:

1/2

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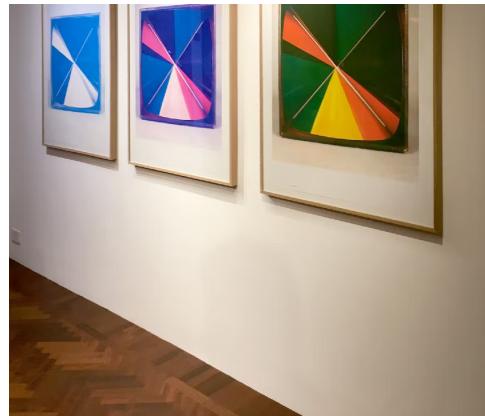
David will be presenting research and work from his six-month residency at the American Academy in Rome on Friday, September 29 at the Picture Room in NYC and Friday, October 20 at MIT.

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