

# reflection

*Blender is a system of parts*

*How do I develop my theoretical and practical **subversion** of the toolkit?*

*Try different approaches:*

*Write the rules after you're done*

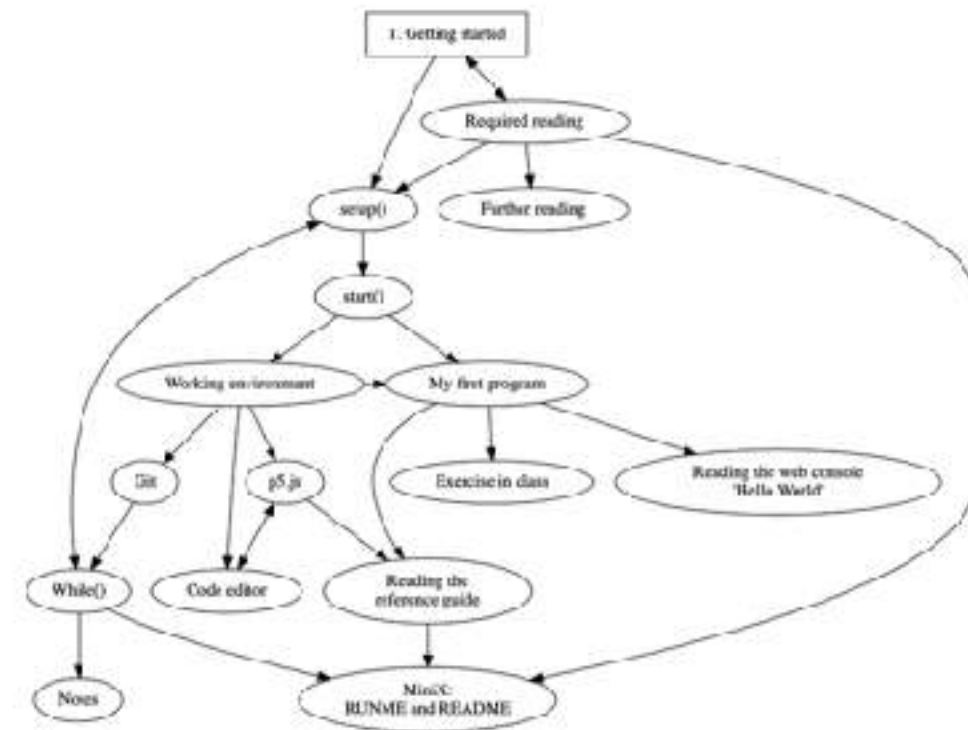
*Hierarchy of tools*

*Iterate more with order bending*

*Making uncooperative tools cooperate/making unimportant tools important (!)*

*My exploration still feels incomplete, what else haven't I experimented with yet?*

### 1. Getting started



#### setup()

It has become commonplace to include programming in educational programmes at all levels and across a range of disciplines. Yet this still remains relatively uncommon in the arts and humanities, where learning to program does not align explicitly with the related career aspirations. This raises questions about what does or doesn't get included in curricula, why this may be the case, and which knowledge and skills are considered essential for some subjects and not others. Certain forms of privilege (related to class, gender, race) are clearly affirmed in these choices, for

Visually explaining your process

Letting go of control to the machine; the machine as the designer

+ Where human control comes back in

today and in the case of conditional design in particular is that the subjective has been distributed throughout the process. Its instructions can only guide and offer constraints. It is not a puzzle whose successful completion was telegraphed in advance by the designer. It is in this way an open system. An open system collects its input from the world in which it is situated and returns its results back to that world. It responds to feedback and adapts in order to sustain itself. Conditional design supports this notion insofar as it recognizes that its inputs 'should come from our external and complex environment: nature, society and its human interactions.'<sup>29</sup>

LeWitt's own work moved from serial objects whose permutations were the result of a generative process, toward more open-ended methods of realization by others of his famous wall drawings that re-inscribed the

empowering creation by many users. Although the rhetoric of decentralized authority pervades these endeavors, the question of control as an expression of authority (and design's role in it) lingers. It is not simply a question of no control or no design, but rather a question of where control and design happen in an open system. Luna Maurer states: 'I choose to give control away. That is a deliberate act. In the act of giving up control, there is a certain connotation of losing it. In my design I give the control away. But to who, or what?' She adds: 'Before I give control away, I must develop a system that will take over the decisions of design. I make decisions on which factors will influence the design, but also what kind of rules and properties this system will follow. In my creative process I'd like to think in terms of organisms.'<sup>30</sup>

Although design has always been open to the fallibility of others in terms of its realization, it has largely been a closed system or aspired to be so. So if close the g opposite c However, I a much mo of creation available, I more perm profession the feedba notion of a complex, v or ecologic context th al design n operative r producer is biological organism.

Writing just two years earlier, LeWitt had spelled out the methodological terms for producing a process-oriented art:

'To work with a plan that is preset is one way of avoiding subjectivity. It also obviates the necessity for designing each work in turn. The plan would design the work. Some plans would require millions of variations, and some a limited number, but both are finite. Other plans imply infinity. In each case, however, the artist would select the basic form and rules that would govern the solution of the problem. After that the fewer decisions made in the course of completing the work, the better. This eliminates the arbitrary, the capricious, and the subjective as much as possible. That is the reason for using this method.'<sup>31</sup>

Seeking to produce an art of seriality, which would allow for permutation and variability within a given rule set, LeWitt would famously remark: 'The idea is the machine that makes the art.'<sup>32</sup> But this seemingly mechanistic, prescriptive view always had a more subjective, human dimension since it assigned to the artist a new priority for the conception and articulation of an idea to make art instead of understanding art as simply a by-product of a series of variable techniques, codified styles, and specific media to be chosen by the artist. The idea for LeWitt was inherently generative in nature, capable of producing more than a singular work.

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of process a team of professional professionals, other skilled artists, or dedicated amateurs following his instructions. In essence, they are more 'digital' than 'analog,' in that they are based on an art equivalent of code strings that allow them to be reproduced authentically again and again—thereby playing sweet havoc with inherited notions of authenticity.'<sup>33</sup>

Here the introduction of 'other skilled artists,' or even 'dedicated amateurs,' to realize the work is to let go of absolute control over the final product. It is more variable than digital replication, wherein the copy is another original. It foregrounds the subjective acts of translation, adaptation, and interpretation on the part of this team of producers. In the end, LeWitt's wall drawings are in effect authorized reproductions that are still governed by the notion of faithful reproduction of someone else's idea.

Today's world of open source computing, social networking, crowdsourcing, user-generated content, app store platforms, and other manifestations of the participatory culture of Web 2.0, suggest systems that are more radically open in nature, soliciting input from and

Context enable sth systems to technology; that harness ideas. If for design help solve; analogous to open the longer just of discrete questions i of tools w/ what kinds share and i potential e the design computer: ago. As Ja learn to cr

"The plan would design the work"

# troubleshooting blender

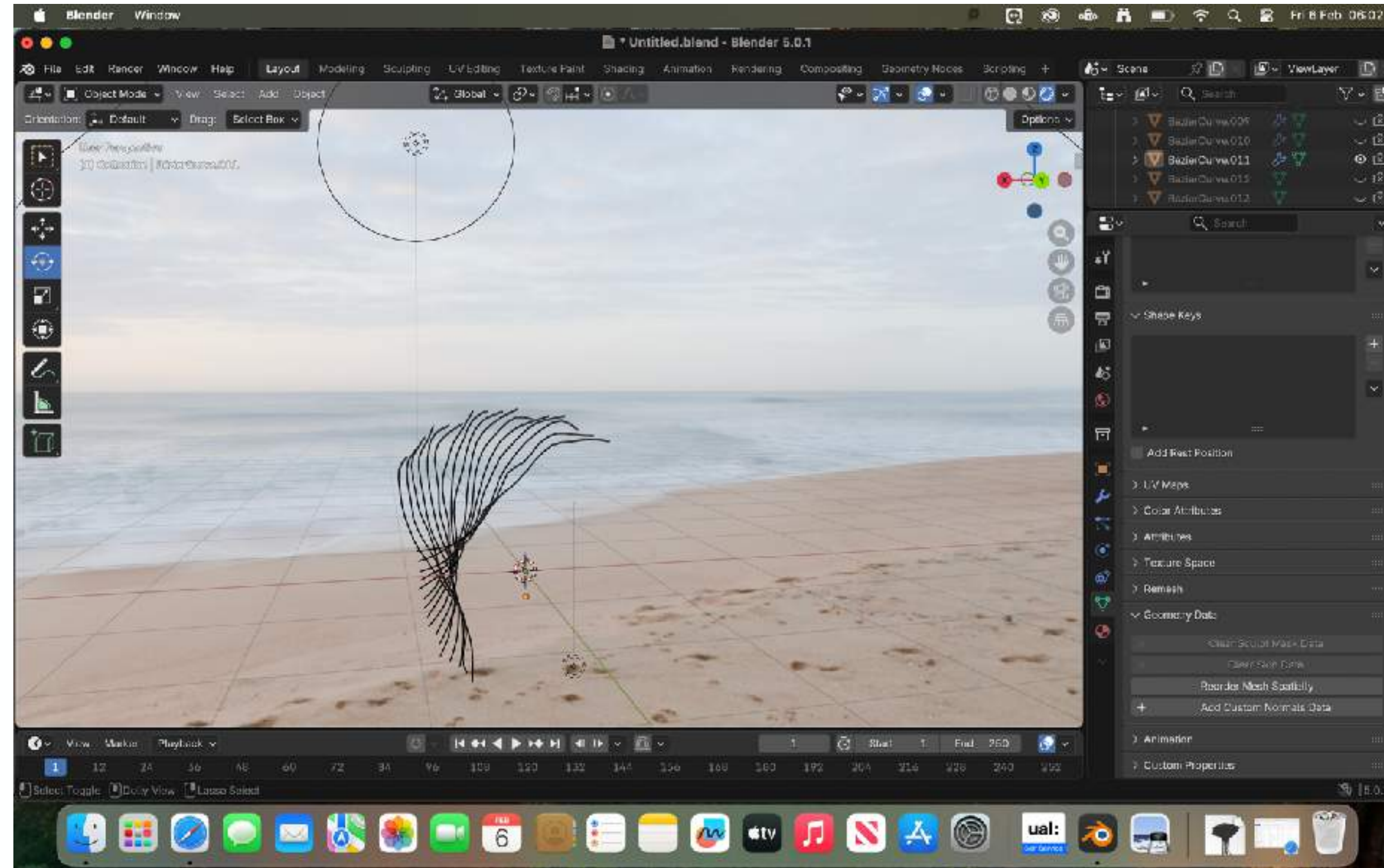


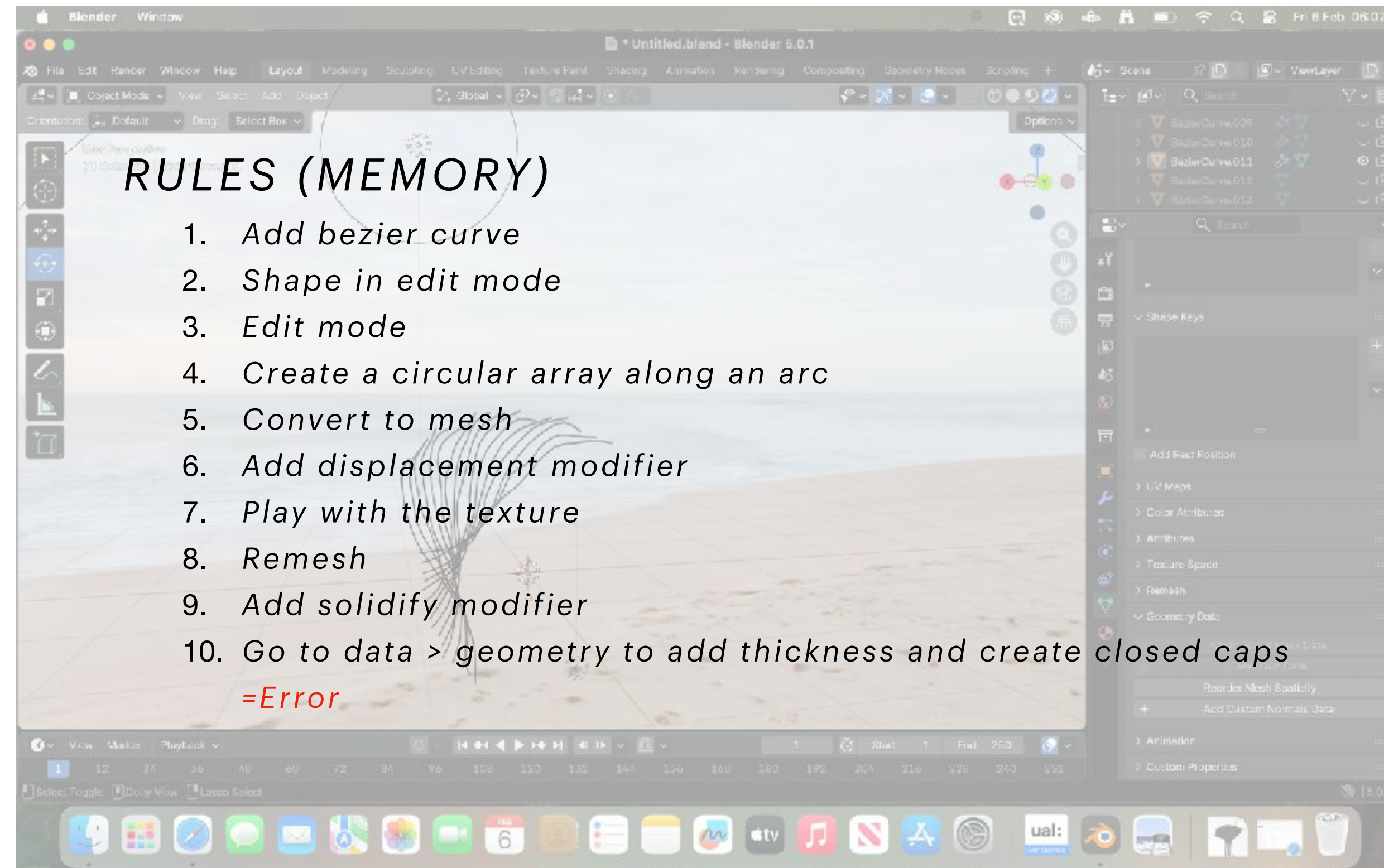
# path\_1

## what remains

### *RULES*

1. *You are familiar with the software now. You've worked through a series of iterative experiments to create a desired object.*
2. *Recreate the object entirely from memory.*
3. *Track your steps, see what remained important to you.*



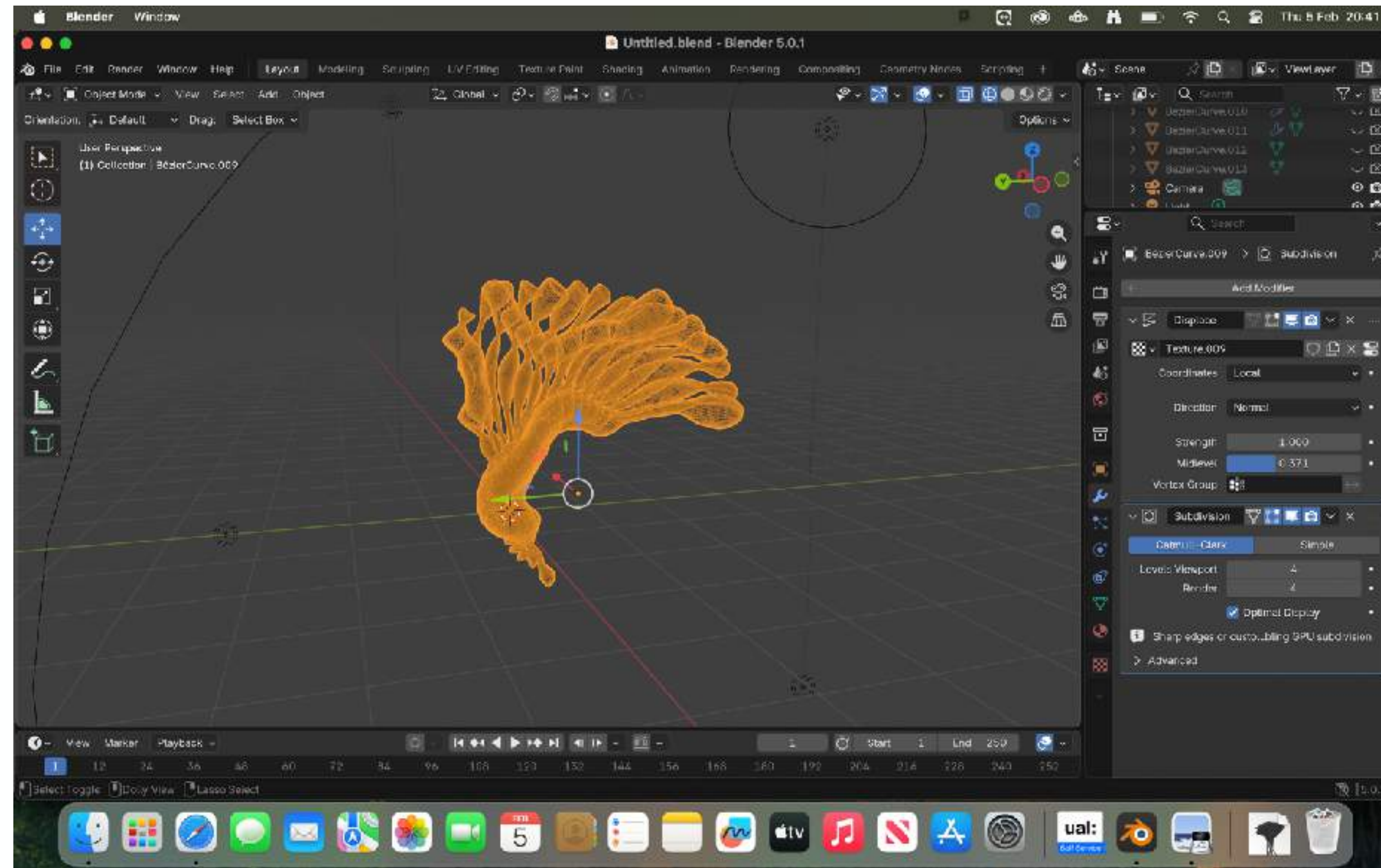


# path\_2

## troubleshooting

### *RULES*

1. *You encountered an error.*
2. *Try to fix it.*



*For a while,  
nothing was  
working to  
convert my  
object into a  
solid form.*

*Then I noticed  
a 'curve to  
tube' modifier,  
which saved  
my object.*

# path\_3

## cooperating with the uncooperative

### RULES

1. Work with the formerly uncooperative tools. Make them cooperate.
2. Follow exactly the order of steps 3-11 to recreate the coral, even if they don't work. Analyse why those steps go wrong. Record any extra steps you take.
3. Edit mode
4. Shape *(I spent more time here, and added a subdivision surface modifier to smoothen)*
5. Create a circular array along an arc *(I modified the array a bit to shape the object to appear more like the source)*
6. Click new texture and add noise to create the ridges *(worked really well)*
7. Go to data > geometry to add thickness and create closed caps *(did nothing)*
8. Go to sculpt mode to smooth and finalise shape *(didn't help)*
9. Duplicating the coral leaves
10. Position the coral leaves *(was confusing)*
11. Slice cylinder objects *(had to add them in)*
12. *(Had to add shading)*

*Why each tool does or doesn't work + which tools are still important*



*Because I was working with a subdivided square to start with, the results were so spiky and interesting (initial shape matters)*

two formerly uncooperative tools were powerful on their own...

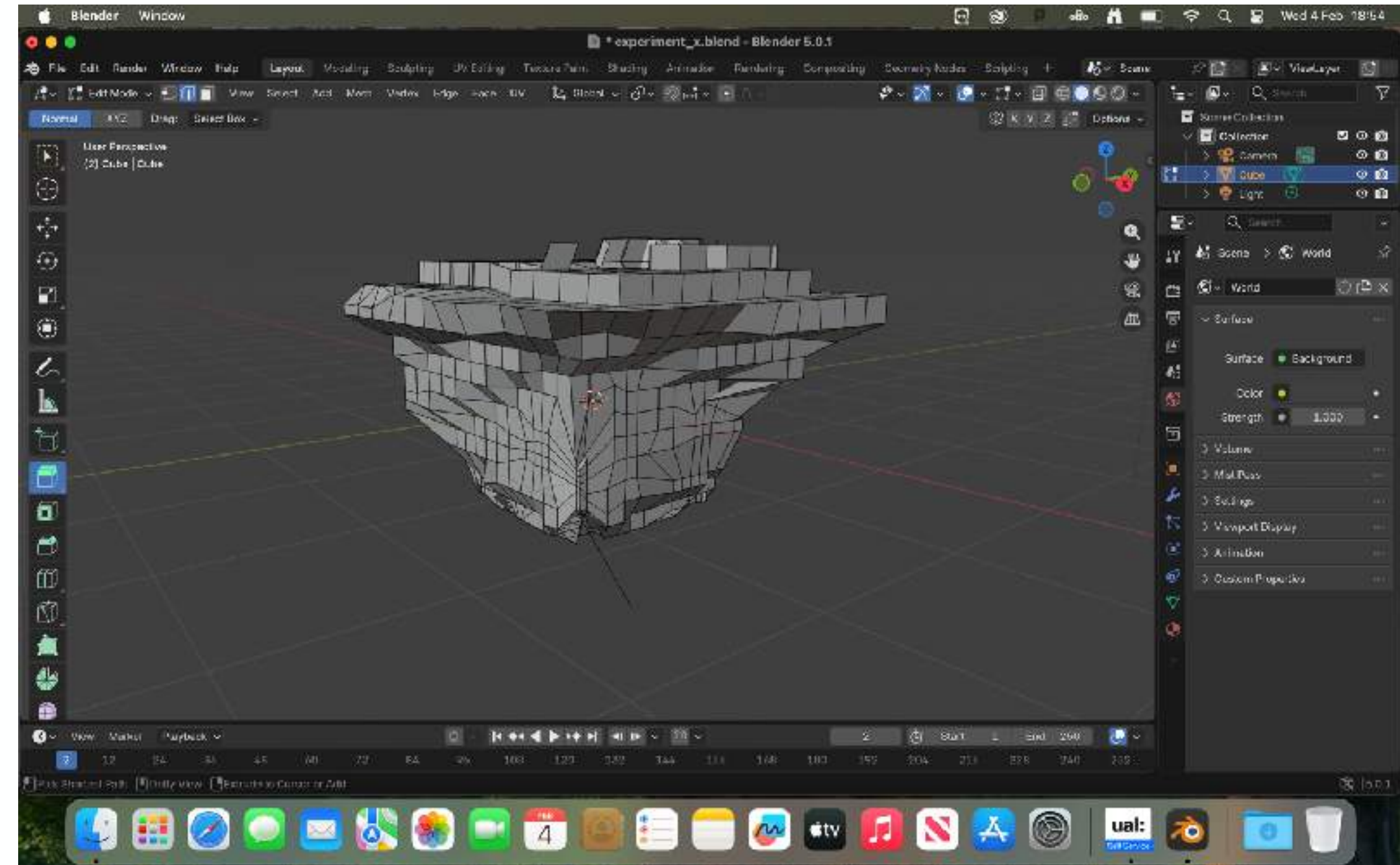
# uncooperative tool #1: edit mode

*Actually very powerful. Even though I used it sparingly initially, and worked with a cube instead of the bezier, it is really powerful in shaping the object into what we want.*

*I focused more time on this tool to sculpt the coral shape as best as I could.*

*As I spend more time with the software, I learn more about each tool's capabilities. Maybe the tool wasn't uncooperative, I was.*

*However, it yields results that are more or less expected as you're trying to work to an end result (human controlling the output).*



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## human controlled output



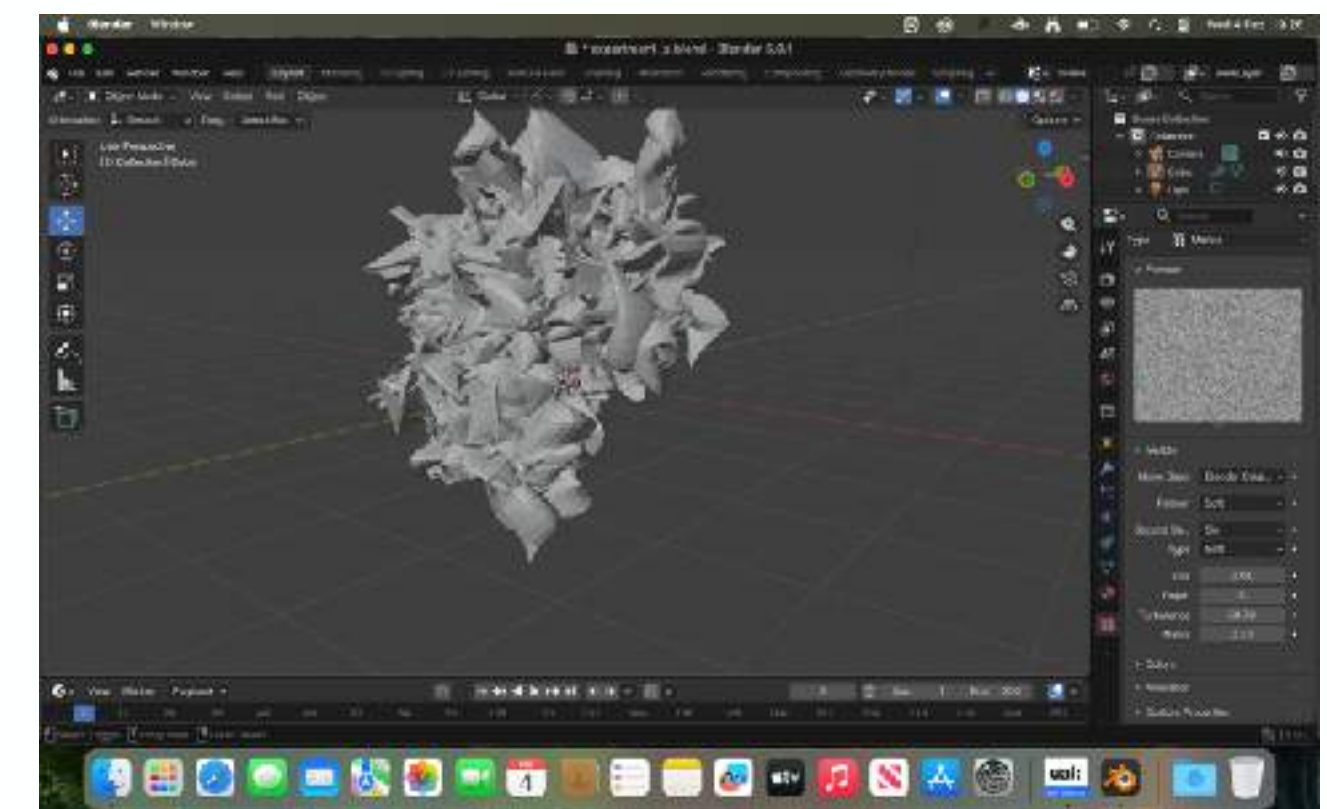
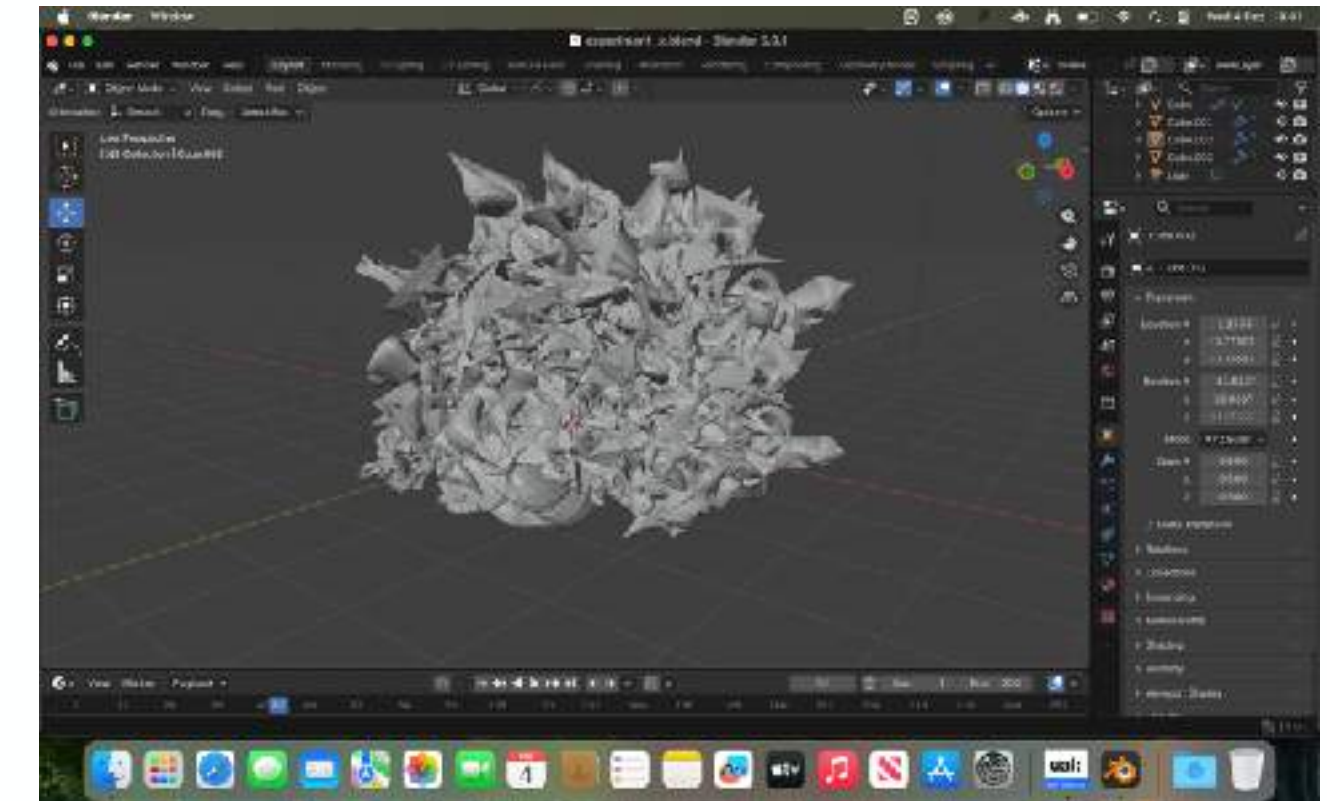
# uncooperative tool #2: displacement modifier

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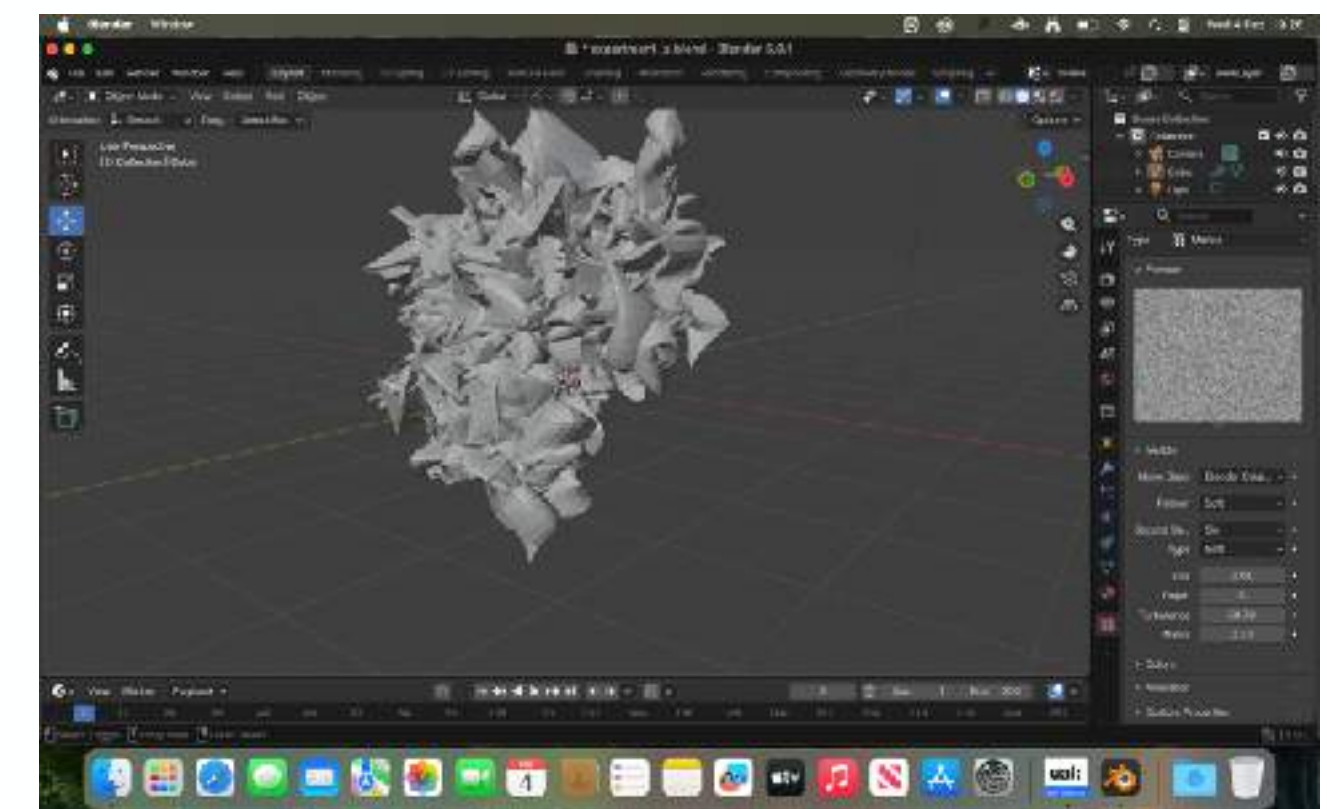
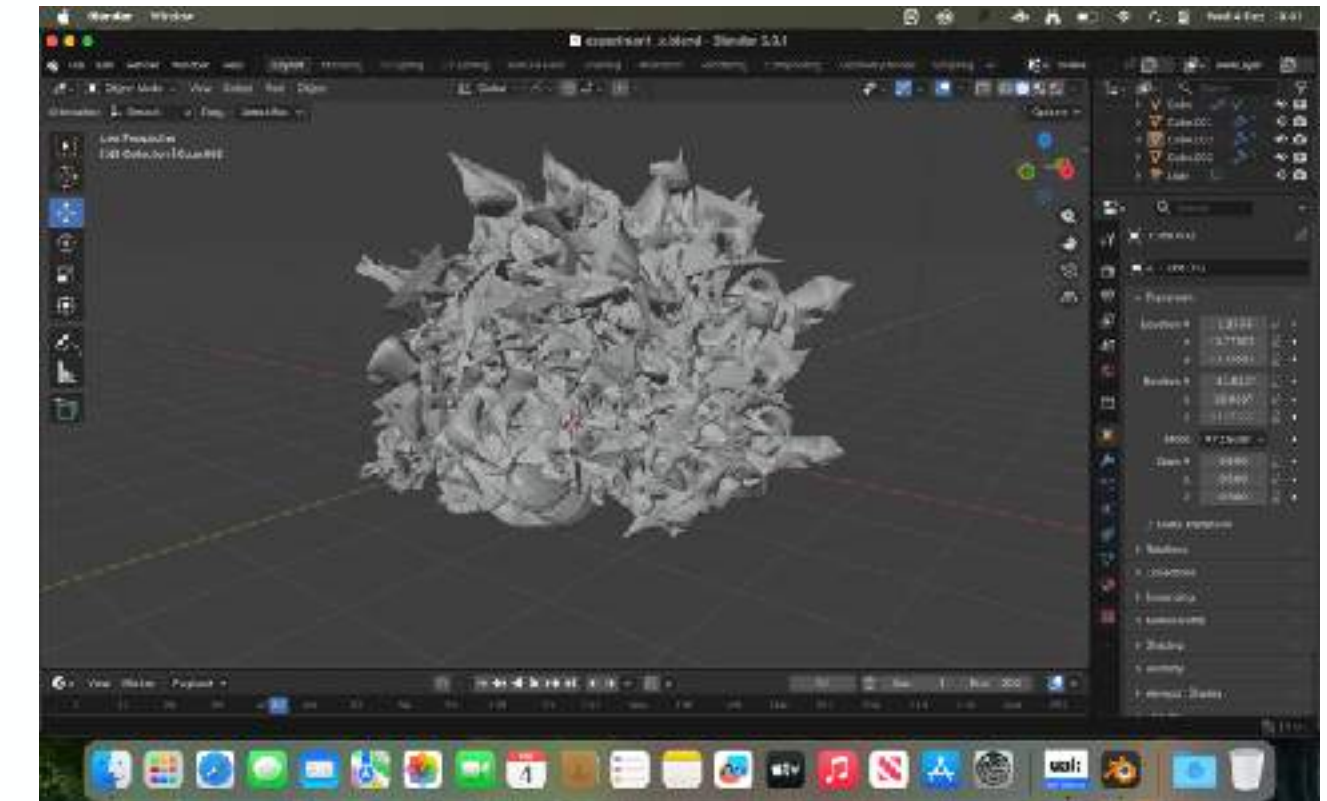
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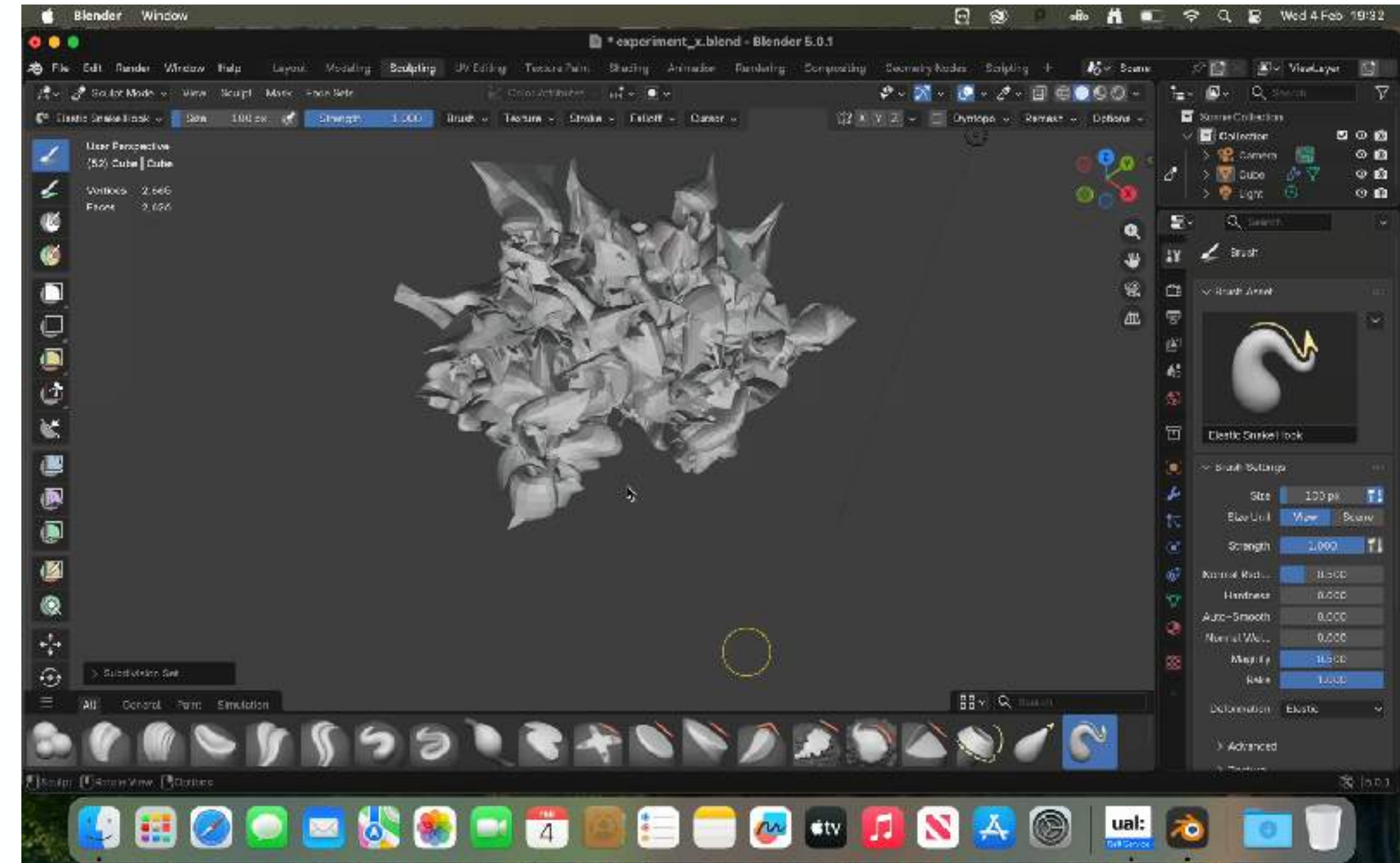
## machine controlled output



special mention

# uncooperative tool #3: sculpt tools

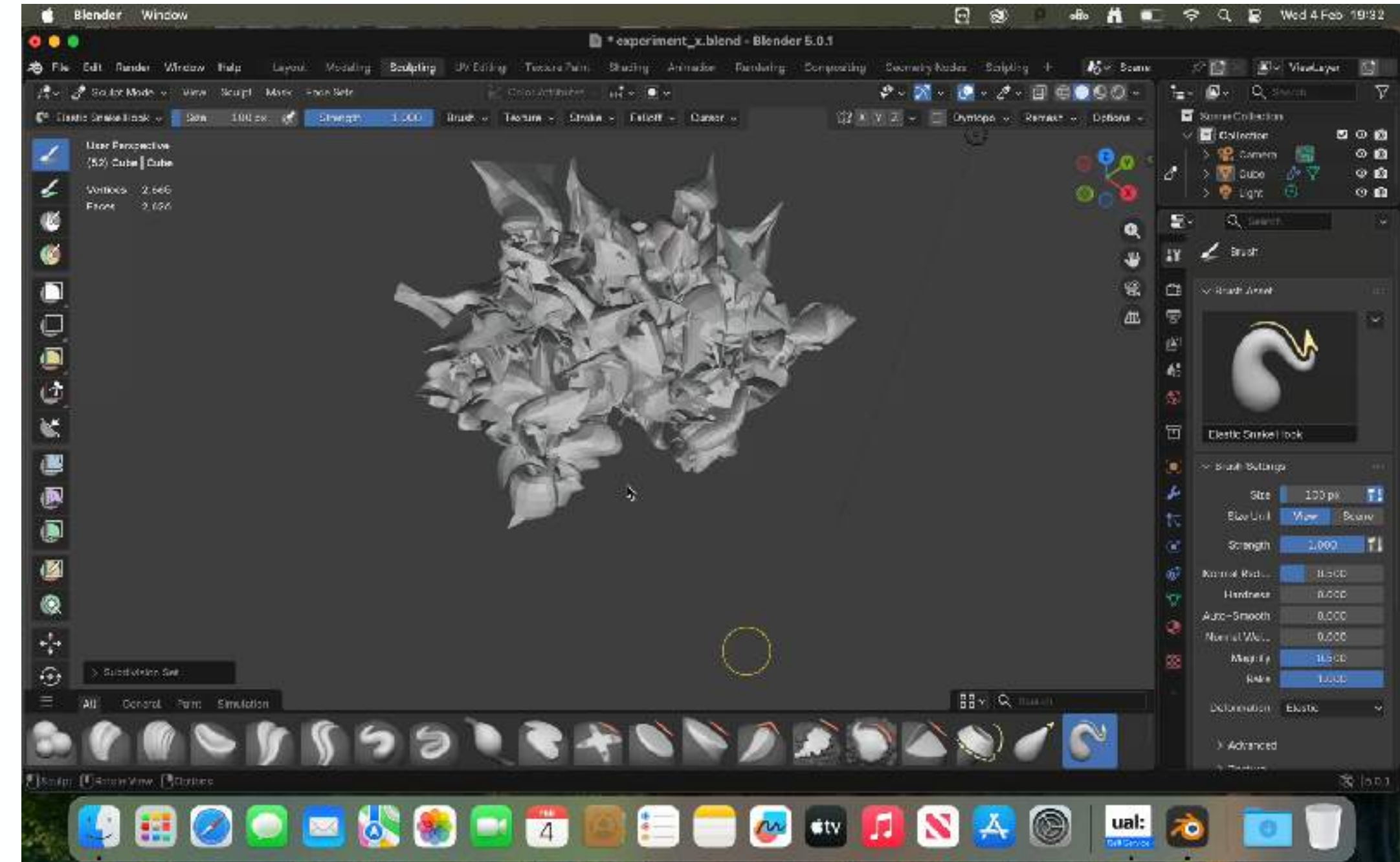
*Even though these tools have a lot of capabilities, and supposedly yield results that are human controlled, somehow the toolkit I was using led to very unexpected results that were controlled by the machine.*



# uncooperative tool #3: sculpt tools

*Even though these tools have a lot of capabilities, and supposedly yield results that are human controlled, somehow the toolkit I was using led to very unexpected results that were controlled by the machine.*

## combined output



# path\_3

## displace away

### *RULES*

1. *The displacement modifier has been reduced to 'one tool'. It's actually a powerful component of tools, with a lot of possibility for unexpected variation.*
2. *Revisit your corrected error.*
3. *Go play.*

Musgrave texture



Search

Type **Musgrave**

> Preview

> Musgrave

Noise Basis Original Perlin

Type Ridged Multifractal

Size 2.00

Noise 0.10

Dimension 1.06

Lacunarity 3.02

Octaves 1.92

Offset 1.04

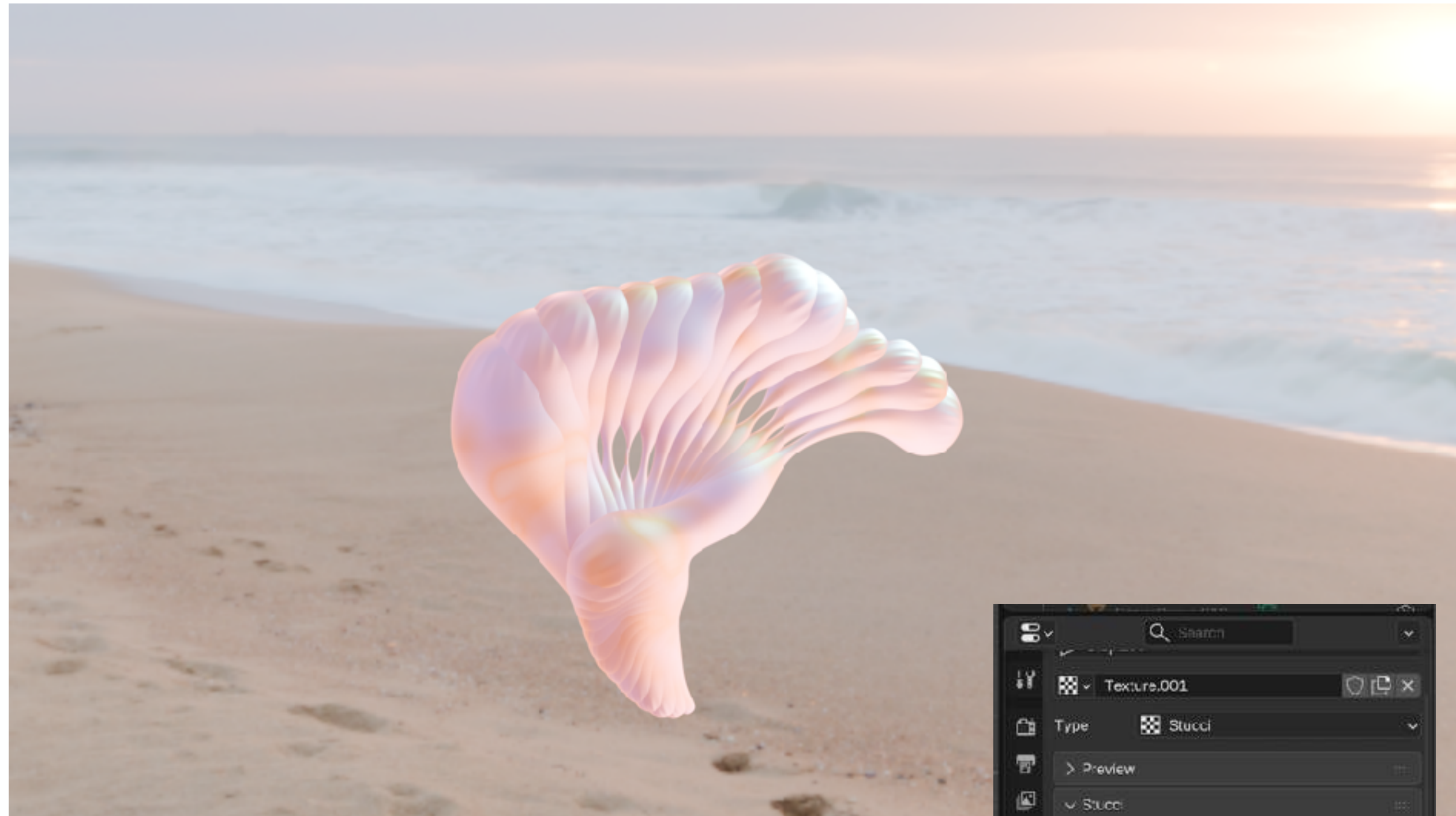
Intensity 0.50

Gain 2.06

> Colors

5.0.1

Stucci texture



Search

Type **Stucci**

> Preview

> Stucci

Noise Basis Blender Original

Pattern Plastic

Type Soft

Size 1.00

Turbulence 5.00

> Colors

Clamp

Multiply R 1.000

G 1.000

B 1.000

5.0.1

Stucci texture



Blender 2.80 Properties Panel for Texture.003:

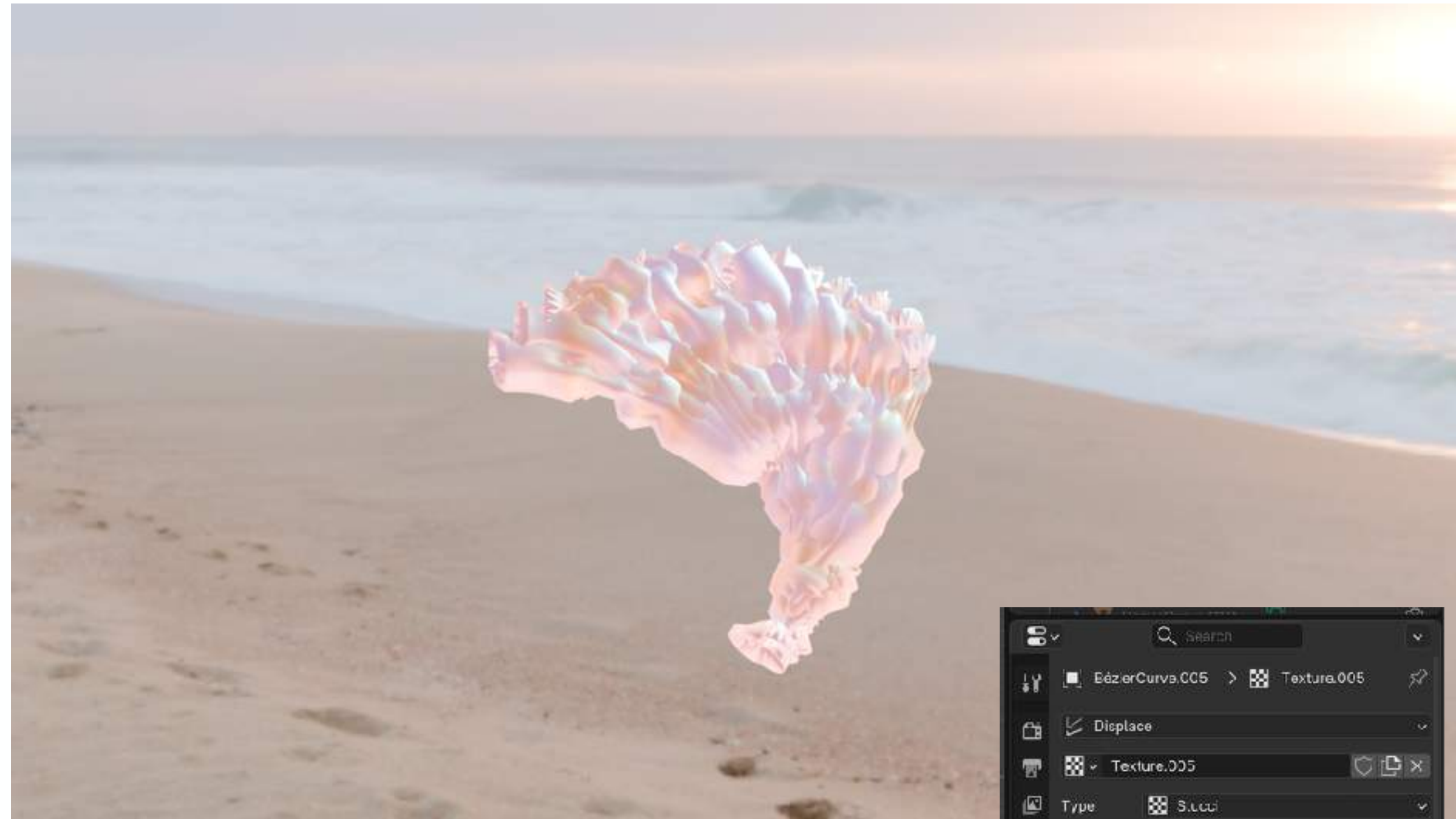
- Type: 3DCC
- Preview: [Preview]
- Stucci
  - Noise Basis: Blender: Original
  - Pattern: Wall Out
  - Type: Soft
  - Size: 0.26
  - Turbulence: 7.00
- Colors
  - Clamp: [Clamp]
  - Multiply R: 1.000
  - G: 1.000
  - B: 1.000

5.0.1

<rotated>



Voronoi texture



Software interface showing the settings for a Voronoi texture. The 'Noise Basis' is set to 'Voronoi F4', 'Pattern' is 'Wall Out', 'Type' is 'Soft', 'Size' is 0.28, and 'Turbulence' is 7.00. The 'Clamp' option is checked.

Voronoi texture



Software interface showing the settings for a Voronoi texture. The 'Noise Basis' is set to 'Voronoi F2', 'Pattern' is 'Wall In', 'Type' is 'Hard', 'Size' is 1.40, and 'Turbulence' is 45.30. The 'Clamp' option is checked.

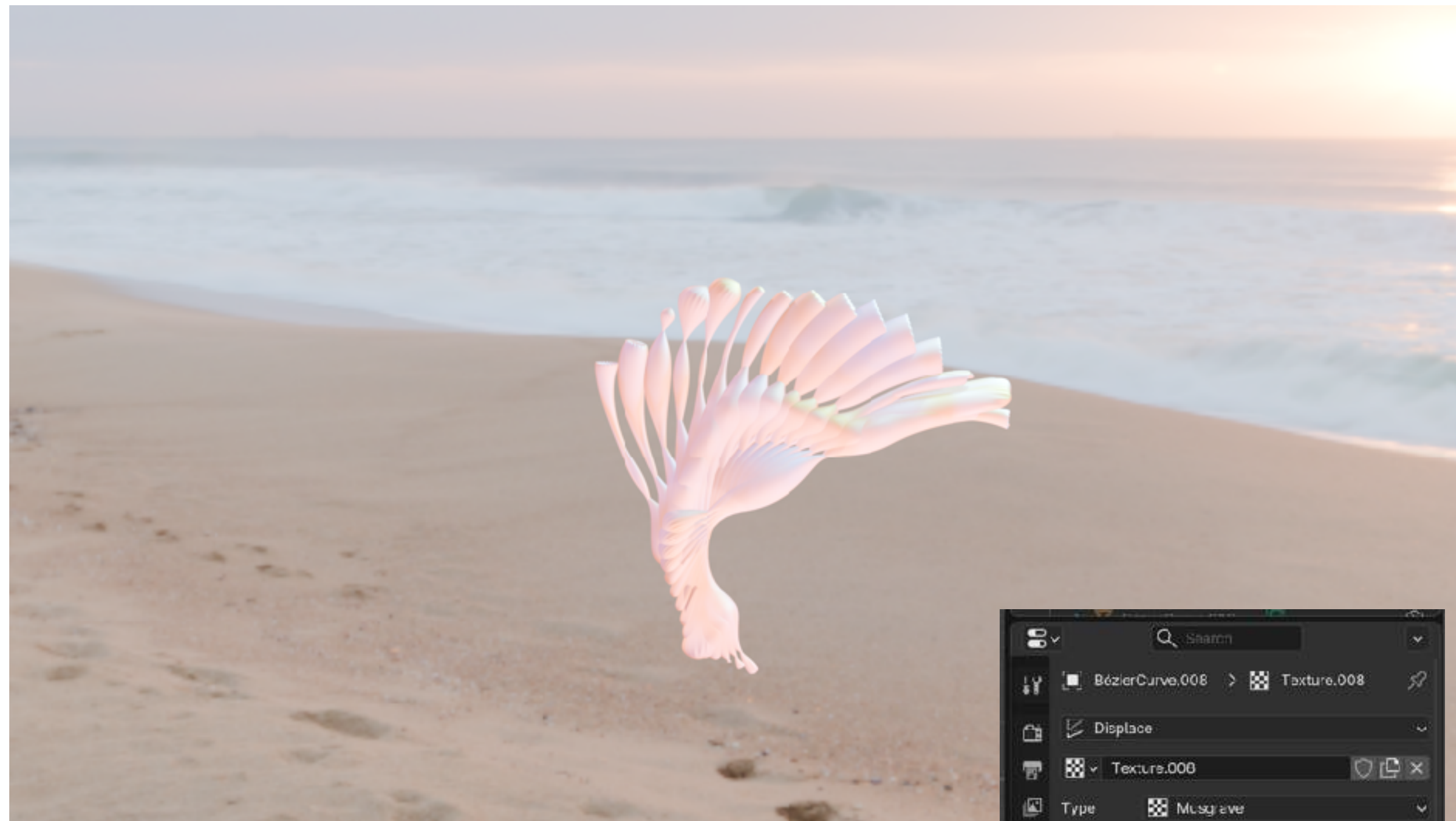
Magic texture



Blender Properties Panel for Magic texture:

- Texture: Texture.007
- Type: Magic
- Preview: [Preview]
- Magc:
  - Depth: 5
  - Turbulence: 2.90
- Colors:
  - Clamp: [Checked]
  - Multiply R: 1.000
  - G: 1.000
  - B: 1.000
  - Brightness: 1.000

Musgrave texture



Blender Properties Panel for Musgrave texture:

- Texture: Texture.008
- Type: Musgrave
- Preview: [Preview]
- Musgrave:
  - Noise Basis: Original Perlin
  - Type: Ridged Multifractal
  - Size: 1.40
  - Nabla: 0.10
  - Dimension: 0.06
  - Lacunarity: 2.12
  - Octaves: 0.74
  - Offset: 1.00

Musgrave texture



Blender 2.80 Properties Panel for Texture.009

Texture.009

Type: Musgrave

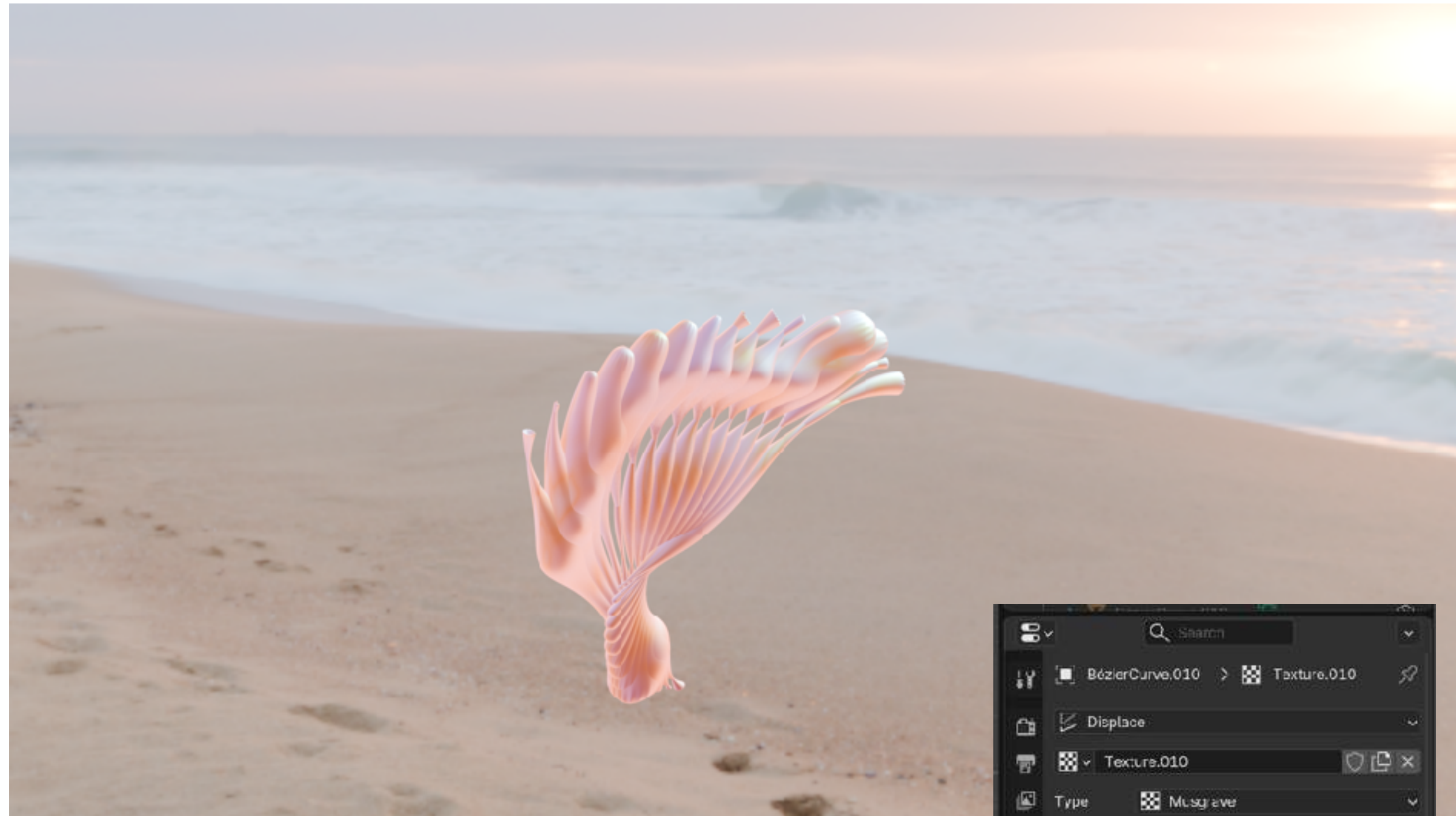
Preview

Musgrave

- Noise Basis: Original Perlin
- Type: Ridged Multifractal
- Size: 0.94
- Nabla: 0.10
- Dimension: 0.38
- Lacunarity: 2.52
- Octaves: 1.48
- Offset: 1.00

5.0.1

Musgrave texture



Blender 2.80 Properties Panel for Texture.010

Texture.010

Type: Musgrave

Preview

Musgrave

- Noise Basis: Original Perlin
- Type: Ridged Multifractal
- Size: 2.00
- Nabla: 0.10
- Dimension: 1.06
- Lacunarity: 3.02
- Octaves: 1.92
- Offset: 1.04

5.0.1

*Musgrave texture (feels most versatile)*

