

Science, art and the metamorphic betwixt

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Abstract

For many years I have been absorbed by the transformative activities of an art workshop. In this paper, by tracking the physically conceptualising processes of an art project in reference to Latour's research on science in action I argue that art-in-the-making and science-in-the-making have much in common, and that their shared correspondences distinguishes them both from the concept of their identity as products. Latour described laboratories as construction sites where social and material transformations realise facts from erstwhile amorphous material. He tracked the physically conceptualizing process of science, breaking it down into steps which he called articulations or translations. Rather than merely exposing each step's morphic change, I suggest that he wants to give us a sense of the metamorphic betwixt. Like science, the creation of a perfect reflection of the world is no longer an aspiring feature of art. Contemporary art is gloriously and pathetically dissolute but what almost unites its divergent practices is also an urge to reveal and experience the metamorphic betwixt.

Keywords

Art, metamorphic, multimodal practices, multimodality, science

Introduction

I am an artist, and I work mainly with clay. Before that I was a clinical psychologist, and I worked mainly with people with brain injury. Over the course of these two careers, I learned that whatever art and science do, they do it in similar ways (March, 2023, 2024, 2025; March and Malafouris, 2023). In 2012, in an interview about an art exhibition entitled **Animism** Latour and Franke (2012), the exhibition curator, that he thought the whole concept of an art exhibition about animism was ridiculous. Animism, he pointed out is, by definition, everywhere. It doesn't need an exhibition about itself. Franke contradicts him, "But if the

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moderns animated without knowing it, or they did magic all the time without knowing magic..." But Latour has had enough and interrupts him.

Newton is ...doing good physics because he is doing alchemy...He is doing transformations of agencies, which is exactly what science is doing. And that's what scientists have always done...

I understand Latour to mean that all knowledge-seeking endeavour is a form of scientific enquiry, and that he was concerned about a tendency in science (including social science) and western thinking more generally to separate one thing from another. Latour argues that science works through expanding and linking not by reducing and dividing. He suggests that, by explicitly embracing artistic ways of working, the sciences can mitigate reductionism. Law (2004) agrees and encourages social scientists to adopt, what he calls, "non-coherent methods", ways of "knowing ...through techniques of deliberate imprecision". (p. 3). He argues that we need to develop

...tools that allow us to enact and depict the shape shifting implied in the interactions and interferences between different realities. There is need for assemblages that mediate and produce entities that cannot be refracted into words...There is need for the coherences (or the noncoherences) of allegory. There is a need for gathering. (p. 122)

Law and Latour are both relevant to multimodality. Law argues for facilitating the mediation and production of entities that cannot be refracted into words while Latour describes how the translation and transformation of agencies create a:

...metamorphic zone where humans and non-humans keep exchanging their properties, that is, their figurations.

Law and Latour thereby outline a mute but materially active multimodal process of discovery which resonates with my experience of art-making, inviting me to draw parallels between the art workshop and the science lab. as epistemological construction sites in ways that question why the two activities are often portrayed as opposites [Figure 1](#).

The above photograph is inspired by a series of images in Latour's book, **Science in action** (1987) in which he uses the double-headed roman god Janus to illustrate his view of the epistemological division in science.¹ Look left and you see the public face of science. But look only left, Latour argues, and you will get an incomplete view of what science is because you do not see most of what science does. The view to the right is the hidden face of science. What I suggest that Latour sees from this perspective is the activity that our contemporary culture usually calls art rather than science. In addition to the split portrayed by Latour between ready-made science and science-in-the-making we can ascribe the left face of Janus to science and the right to art and show how art and science are split, contrasted, and partially decapitated, creating potential for the same confusion that Latour illustrates in his next figure.

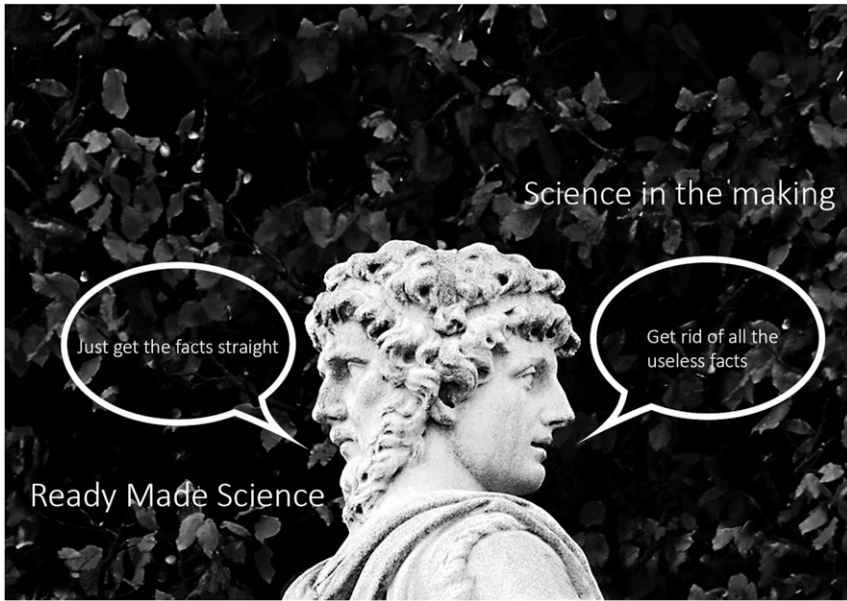


Figure 1. Latour used the Roman God Janus to portray two radically different epistemological views of science.

According to Latour the left side of Janus is severe, the right side is lively, Ready-made science knows stuff, science-in-the-making is a journey of unknowing (see also Vallée-Tourangeau, 2023 & Vallée-Tourangeau and Soderberg, under review, concerning Latour's position on science). Let us now see what happens if we replace Latour's double-headed Scientist with the face of an artist [Figure 2](#).

We see Giacometti in his Paris workshop. The sculpture-in-the-making is talking to the artist-in-the-making about clay.² I chose Giacometti because he habitually made life-size sculptures but then continued to work on them, removing more and more material until there was no sculpture left. His brother, Diego would go into his workshop at night and remove sculptures to save them from complete dissolution. If it wasn't for Diego there would have been only art-in-the-making, no ready-made-Giacometti-art left for us to see.³

Giacometti in his workshop helps introduce the interchangeability of art and science. If we put a blackboard in front of him look what happens...[Figure 3](#).

Take away the relationship between hand and clay and replace it with a relationship between hand and chalk and Giacometti becomes a physicist. You may complain that I am making a non-sensical visual joke when I should be making a reasoned verbal argument. But jokes are jokes not because they are incoherent but because they are, in Law's terms, "non-coherent". They are metaphoric facilitators of knowledge. A visual joke that combines and merges two erstwhile autonomous figures helps us to conceive of art and science as a single, two-headed Janus. Making a joke doesn't turn the absurd into truth. It just makes it possible to think about.



Figure 2. Clay makes a sculptor out of giacometti.

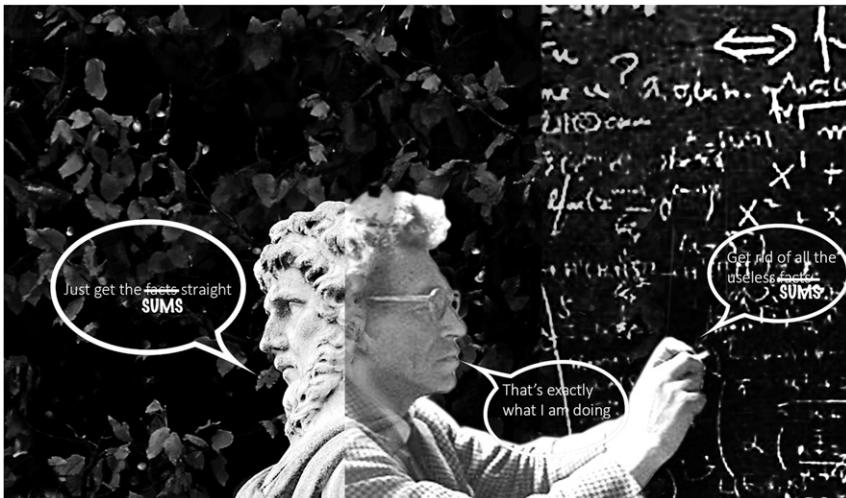


Figure 3. Equations make a physicist out of giacometti.

Art at work, science in the making

In this section I provide a glimpse of life in an art workshop. I follow a single strand of an exploratory, materially embedded process as it develops into an explicit art-project that later found itself a temporary home in an exhibition space. The strand to which I give



Figure 4. Notebook entry 10.4.21. pots of oxides... mixes everywhere, shellac...A shifting crowd of actors - that I work on more or less in parallel. How did they come together ? And what does it mean to say they came together ? <https://youtube.com/shorts/4dmlyFMjy-8?si=j9SkT-lu-Q5j7ZVQ>

voice is woven into and emerges from a tangled mess of workshop contents and processes. Talking of her childhood, the novelist Margaret Atwood, said of her parents,

They always allowed us to make messes in our room and by messes, I mean projects, which always begin as messes.” (This Cultural Life, BBC radio 4, 2024)

I will begin somewhere in the middle of the mess that is portrayed in the figure and video link below - the moment when the disorder is temporarily swept up into what Latour might call a handful of immutable mobiles [Figure 4](#).

The project was an application to be part of a joint exhibition called **Migrations** that was to take place in the Swiss Ceramics Museum in Geneva the following year. A joint exhibition is to an artist what an edited book is for an academic. The artist/academic puts in an abstract/proposal for an artwork/chapter on the subject or theme. If accepted the proposal must then turn into a product, a piece of ready-made art or science, made ready especially for that exhibition or journal.

Tekenu’s Intent: a proposal for a piece of ready-made art

This project departed a little from protocol because the proposal to the museum contained two parts. Part one was indeed a piece of ready-made art - an installation called **Tekenu’s Intent**. To sell part one to the museum, I sent them some writing and a series of immutable mobiles in the form of photographic figures of a maquette [Figure 5](#).

The above figures are like maps. They are a way of converting a specific materially and topologically embedded event-experience into a format that can be reproduced and displaced. We can even take the notion of immutable mobile a bit further here because the figures are



Figure 5. The words and pictures I sent in to support Part I.

mapping both an existing and a prospective terrain - prospective because it is an immutable mobile of an intention. Latour describes nine characteristics of an immutable mobile

Mobile

Immutable

Two-dimensional (flat)

Modifiable in Scale

Easily Replicable

Can be combined

Can be superimposed

Can be integrated with text.

Being two-dimensional, the inscriptions they contain can be merged with other dimensions to build “re-representations” of objects.

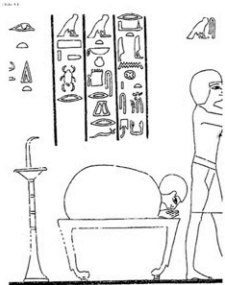
The left head of Janus (ready-made art) understands immutable mobiles to be representational, in this case they represent a proposed product. In contrast, for the right head of Janus (art-in-the-making), immutable mobiles are not figures that represent but event-experiences that have been transformed into things with the power to cross time and space and animate other situations.

The archaeology of cognition: a proposal for art-in-the-making

Part two of the proposal makes the case for a small sub-exhibition called **The Archaeology of Cognition** for which I sent in the following immutable mobiles as support [Figures 6 and 7](#).



Tekenu in the tomb of Ramesis



Tekenu in the tomb of Rakhmire



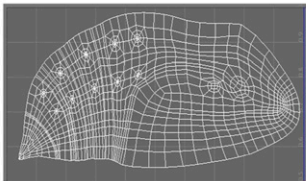
Chrysalis A on bier A



Sculpting from Acherontia



Moulding Acherontia



Chrysalis Map



Acherontia Chrysalis



Preparation for 3D printing



Stilt recovered from the lake bed in 2009



Stilts in the Musée Art Histoire,

Figure 6. Images in support of Part 2.



Figure 7. Images in support of Part 2.

The Archaeology of Cognition exhibition would display artefacts, models, drawings, photos, videos in a manner that mapped out how **Tekenu's Intent** gathered together a collection of disparate event-experiences and pulled them to itself to make an artwork. **The Archaeology of Cognition** was not ready-made art but a proposal for an exhibition about art in the making.

Perhaps predictably, the museum accepted the ready-made art but declined the art-in-the making and **The Archaeology of Cognition** was eventually hosted by another institution. <https://www.gus-sip.ch/et/expos/the-archaeology-of-cognition>

You can see a video of that exhibition here:

3 minute version <https://youtu.be/5FObt6BecL0>

30 minute version <https://youtu.be/mxgKKt7HZQY>

Let's now go to the finished product - or at least some figures, that is immutable mobiles, of the finished product. I am insisting on calling them immutable mobiles because I want to make the point that a further displacement and translation is taking place now, as you read, this time into the realm of academia.

If you look at the two pairs of photos below you can compare and contrast the product with its model. You may be struck by how similar they are. This is because they issue from a professional workshop that must deliver on its promises **Figures 8 and 9**.

But perhaps you can also see or maybe feel some important differences that exist between model and finished work. These differences exist because a professional art workshop also knows that, to deliver a piece of art, workshop activity must risk prioritising process over product. The following video gives a 3 minute virtual visit to the final installation which I hope goes some way to showing you how ready-made art transforms itself into a beholder's experience <https://youtu.be/9g0H1Vlq9z4?si=IBmA1YVsg8vSFbFZ>



Figure 8. The maquette (left) and the final installation (right) at the Musée Ariana, Geneva (2022).



Figure 9. The maquette (left) and the final installation (right) at the Musée Ariana, Geneva (2022).

Next, I want to give you a glimpse of the sort of circulating references that inscribe themselves during a period of art-in-the-making. It is a snapshot that risks freezing the process into an illusion that there was a pivotal moment of insight. If you feel yourself drawn into this illusion it may be better to stop reading for a while.

I take you back to a time before I was preparing the proposal for the museum – to a Saturday in November 2018 at 17.30. I am walking past the Museum of Art and History in Geneva and on impulse I go in to wander around the archaeology section for a few minutes before the museum shuts at 18.00. At closing time, I walk past this [Figures 10 and 11](#).



Figure 10. I am pulled up short, enchanted.

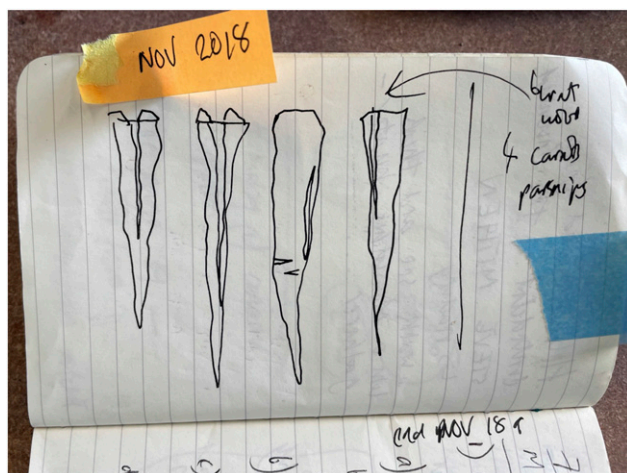


Figure 11. Quick Sketch of mystery installation.

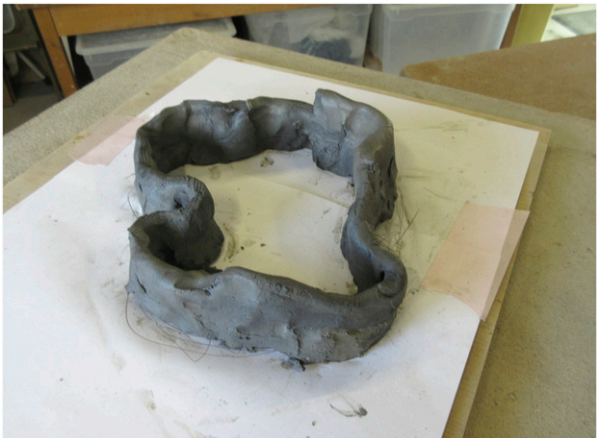


Figure 12. Domain storming starts here.



Figure 13. Goes to here.

I cannot remember ever having seen this exhibit during previous visits and I am stopped in my tracks, captivated and fascinated. I would go so far as to say enchanted. It looks like a mysterious contemporary art installation. I do a quick drawing which leaves me no time to read the exhibit label before I am ushered out by security.

I come upon the drawing again a few weeks later when I'm leafing through my notebook, and again I am puzzled and curious about this strange exhibit. I go back to the museum; take some photos and this time I do read the label. I learn that the four stakes supported a bronze-age lakeside dwelling on the banks of Lake Geneva.

The photos return with me to my workshop where they too languish for a while –on a USB stick this time rather than in a notebook. More and more immutable mobiles are congregating there without any discernible intention beyond the act of congregating. The following spring arrives at the workshop and along with it a small team of researchers. We are about to spend 2 days looking at the feasibility of using newly developed, mobile eye-tracking equipment to study the creative process in pottery workshops. We use the first sculptural gestures in relation to these bronze-age stakes as a test. At the time, as I say, these stakes exhibited no clear creative intentions, but sculpting offers a way of thinking about things, an activity which is therefore better called **thinging** (Heidegger, 1975; Malafouris, 2014) The art workshop is a context in which, the drawings, photos, clay and I



Figure 14. Then here.

have an opportunity to thing together about creative possibilities; an exploratory process that I will call **domain-storming** to distinguish it from brain-storming. The following figures show how the thinging developed. And this is a freeze frame film of the 2 days... <https://youtu.be/HLs1nRwTytl>. Figures 12–14.⁴



Figure 15. Before starting again and going here.



Figure 16. And then evolved through stages A-D.

The exercise was useful for testing the eye-tracking equipment, but the domain-storming exercise found no creative issue and so, as you can see in the above film, I took the work apart and started making something else with the clay which did eventually find a developmental life of its own. Figures 15, 16 and 17.



Figure 17. To become these: Welcoming down the blessings. Details of an installation at Taste Gallery, Geneva, 2019.



Figure 18. Image map of circulating references¹ and ².

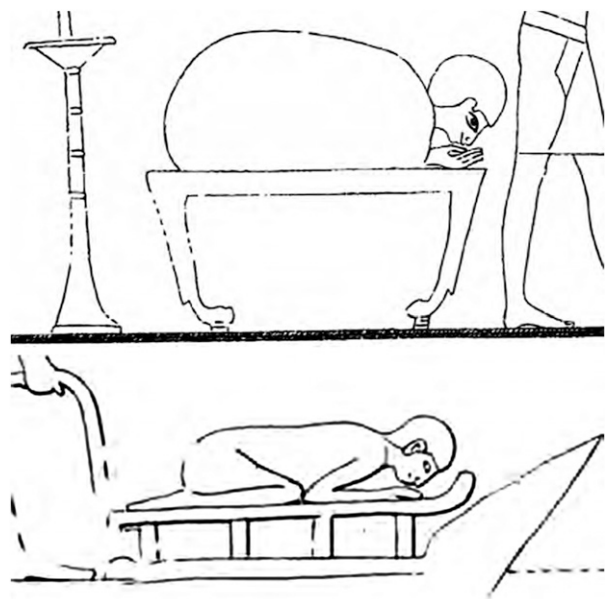


Figure 19. Two drawings of Tekenu on the wall of the tombs of Rekhmire and Montuherkhepeshef. (From [Davies, 1943; 1913](#)).



Figure 20. The Gathering of the four immutable mobiles.



Figure 21. Four Bronze-age stakes in the Art and History Museum. Geneva.



Figure 22. Jerome Stettler's wall drawing of chrysalids at the Ferme de la Chapelle gallery in Geneva.

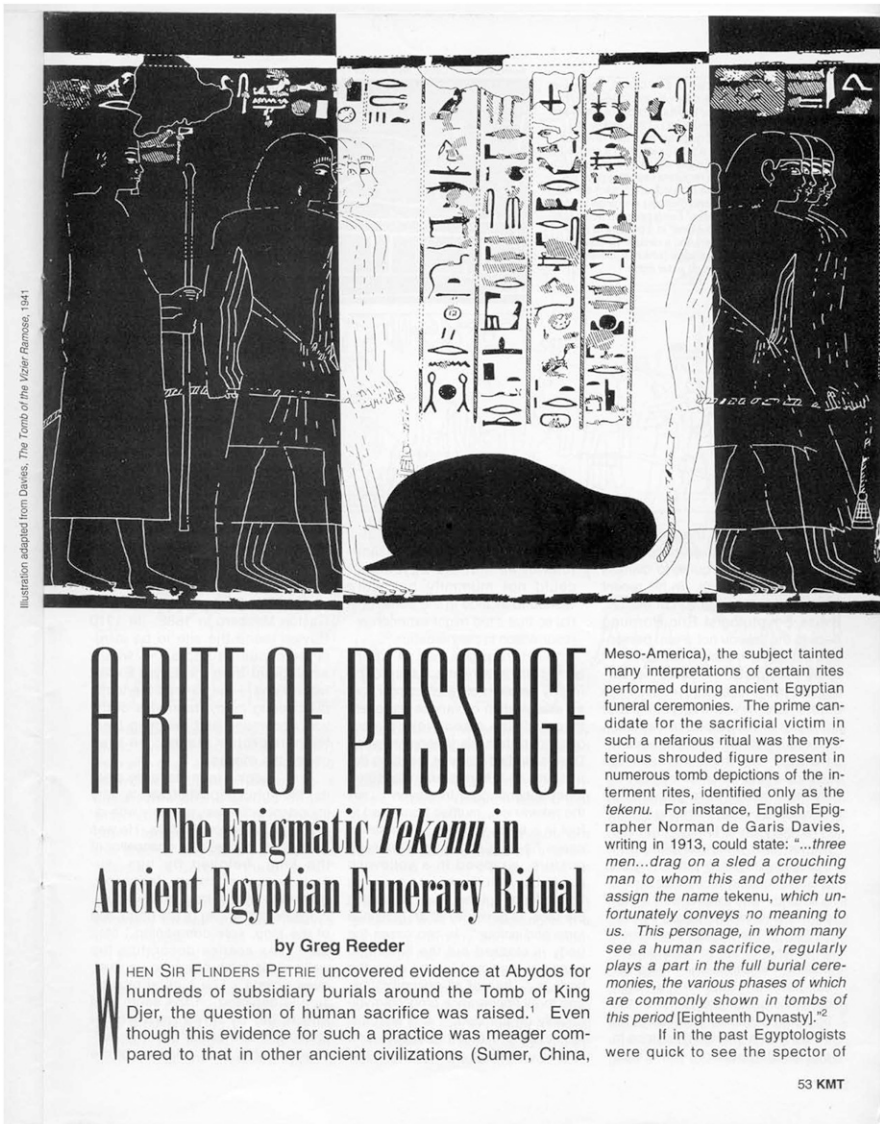


Figure 23. The title page of Reeder's article about Tekenu. Emailed to me by Academia.

Not only do they share the same clay but circulating references pulled these elements into the story for another reason. Giving more details would require the snapshot to be extended into a feature-length movie. Instead, I include the image map below which gives an overview of the pattern of circulating references pertaining to Tekenu's intent. I also hope that it goes some way to dispelling the illusion that the eponymous intent was in any way linear. [Figure 18.](#)



Figure 24. The four leading figures of the reformation as portrayed in the Parc des Bastions, Geneva by artist Paul Landowski.



Figure 25. Thinging about wooden stakes.

Here are the flowers in the centre, circled in red. Just above them highlighted in green is the drawing and the photos of the stakes. I am not going to spiral you through the whole image map. I will limit myself to drawing attention to three other elements and finish the story there.

At the bottom left a blue circle highlights the image of the Wall of the Reformation in Geneva: a series of monumental statues that depict the leading players in the reformation.



Figure 26. Brings about a metamorphosis.



Figure 27. Which turns out to be driven by Tekenu's intent.

I saw these daunting figures for the first time when I moved to Geneva in April 2000. Above and to the right, highlighted in yellow, is a photo of a wall-drawing by artist Jerome Stettler which I saw in December 2020 in an exhibition in Geneva. Finally and just below a circle in lilac indicates a pdf which, based on my reading profile, was sent to me by the website, **Academia**. It arrived the week after my visit to Stettler's exhibition and is an article about Tekenu – a figure found depicted in various guises on the tomb walls of ancient Egypt [Figures 19–](#).

These four immutable mobiles - the stakes, the reformation wall, the wall-painting by Stettler and the pdf about Tekenu (all four already distillations of their own patterns of circulating references) – By finding common cause these four elements gave the process of thinging a focus, a process I called **The gathering** in the **archaeology of cognition** exhibition, [Figure 20](#).

Conclusion

To recap. We have the stakes from the bronze-age lakeside village of Plonjon, now part of a museum installation [Figures 21, 22, 23](#) and [24](#).

Then we have Stettler's wall drawing which shows the chrysalis stage in the life cycle of lepidoptera.

Next, the pdf I received the week after seeing Stettler's drawings - a pdf about Tekenu, an enigmatic figure from ancient Egypt ([Reeder, 1994](#)).

And finally, a few minutes' walk from the museum where I saw the stakes, you can find the wall of the reformation, sculpted by Paul Landowski (the artist responsible for Rio di Janeiro's sculpture of Christ). These four elements may have already done their gathering for you and merged themselves into **Tekenu's intent** though the process of re-articulation, translation, transformation and transubstantiation described by Latour. If not here is some help. [Figures 25, 26](#) and [27](#).

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Notes

1. The first five figures are inspired by figures in [Latour \(1987\)](#) but are reconceptualised to avoid copyright infringement.

2. Giacometti made most of these sorts of figurative sculptures using plaster-of-Paris, not clay – but this looks like clay to me and the word “clay” fits more neatly into the speech bubble, unlike “plaster-of-Paris.
3. The way I am using the phrase “ready-made” here - as equivalent to ready-made science is different from those things called **ready-mades** in art circles and of which Duchamp’s **Fountain** (an industrially produced urinal) is probably the most famous example.
4. I used a security camera hence the poor quality.

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