theory

The fascinating mythology of grace and gift exchange opens up an argument about appearances that transcend the boundaries of things through a form of radiance or shining.

Shining and automation: the phenotechnology of ornament

Lars Spuybroek

In this article, Lars Spuybroek develops the idea of phenotechnology. He connects Ancient myth with digital technologies and ideas about making and gift exchange. His thinking combines grace, appearance, production, decoration, giving, and receiving to reflect on the nature and potential of made things. What follows asks architects and others – particularly those most concerned with ideation and material prototyping – to reverse the relationship between surface and space. What are the opportunities, he asks, of imagining space as the very depth of radiating surfaces?

What does grace tell us?

Since grace is so intimately linked to gift exchange,[1] it tells us that things are gifts. And since the name of the first of the Three Graces, Aglaea, literally means shining, it means that things shine, sometimes literally, though mostly figurally. That is, a glow that binds things to their appearances. In itself, there is nothing new about the connection between things, gifts, and appearances. After Marcel Mauss established the importance of the gift, many scholars developed it in various directions, especially outside the realms of sociology, ethnography, and anthropology, bringing it within the range of phenomenology. This was no accident, since prior to Mauss, Edmund Husserl had developed the concept of *Gegebenheit*, or givenness: an illustrious term that would exert enormous influence during the following century.[2] For him, things were given as phenomena. His former student and assistant Martin Heidegger noted on the subject: 'What does it mean: "given", "givenness" – this magical word for phenomenology and the stumbling block for all others?'.[3] A stumbling block, especially when considered in the framework of Husserl's conception of presence, where things give themselves 'for' and 'as'.

In Husserl's phenomenology, things can only exist as appearances, and appearances can only exist 'as' and 'for us'. Heidegger was deeply troubled by the latter, and rightly so, since why wouldn't things be more than what we take them for? Let us look at what he says about *Zeug*, a word maybe best translated with 'stuff' or 'tools', but generally with 'equipment':

Equipment – in accordance with its equipmentality – always is in terms of its belonging to other equipment: ink-stand, pen, ink, paper, blotting pad, table lamp, furniture, windows, doors, room. These 'things' never show themselves proximally as they are for themselves, so as to add up to a sum of realia and fill up a room.[4]

Ink refers to the pen as to be written with, the paper to the pen as to be written on, the pen to the paper again as to be written with, a whole network of things appearing-as to one another. According to Heidegger, things can only *show* themselves for others, while they *are* for themselves, drawing a sharp line between phenomenology and ontology.

But suppose it gets cold in the room and I have to light the fire, and I find that my matches are dangerously short, what do I do? I take that piece of paper, roll it up, light it, and use it to set the wood on fire. Suddenly, the paper is not to be written on, but to be lit with. What allows for this? Phenomenology could hardly explain such a switch, because from one appearance-as it would need to move to another appearance-as, and there is nothing between phenomena to bridge the gap between them. For Heidegger things are clearer: the paper recedes from presence into its background existence, into a more generalised state of Being, to then reappear as another tool. And it would be the same procedure for the paper to be folded into a little airplane when he is bored, or used as a slide for his tobacco to be guided into a jar, or crumpled into a ball and thrown in the basket when he doesn't like the last paragraph he wrote: a constant back and forth between a priori background and actual foreground.

Heidegger's stance is certainly clearer than that of phenomenology, but is it clear enough? I wonder. How – we should ask him – would we, with our eyes, pull the paper from its ontological recess into existential visibility? Is it in Heidegger's thinking not again all up to us? For the paper to be truly independent of us, i.e. to be *real*, i.e. to *be*, we would need a form of recess that does not retreat from presence and visibility. Now, before we proceed let us halt here for a moment. While it sounds like the mother of all paradoxes, a visible form of recess suggests that somehow it should be possible to solve

> *'realists and materialists have […] difficulty explaining the presence of appearances, whereas idealists and phenomenologists have […] difficulty explaining reality'.*

the problems of phenomenology without separating the shining appearance from its deeper existence. Just as a reminder, let me add that realists and materialists have enormous difficulty explaining the presence of appearances, whereas idealists and phenomenologists have similar difficulty explaining reality. In between there is nothing but sheer philosophical purgatory. So, we have to tread carefully. To succeed we would need to establish a viable position between things as ontological entities and appearances as phenomenological entities. And we would have to push appearances from our side towards things on the other side to see if we can at least hyphenate the two. What I would suggest to call the figure claims to do exactly that.

Shining and Aglaea
This may not sound altogether implausible and unreasonable, yet it does imply a rather perplexing clause: namely that the visibility (knowability, sensibility) of things does not originate in human consciousness, the realm where things appear-as. Put more bluntly, it means the fact that we see things does not depend, or at least not *wholly* depend on our brains, since evidently grey matter plays a role in perception. Yet the brain, not being able to grasp anything that is not already present, must play a secondary role. Primarily, things allow us and enable us to see them. By consequence, this must involve a form of gift exchange. Visibility is handed over and shared. In essence, this is the formula of shining. Which, admittedly, sounds abstract at best, if not wholly unreal. But let us recall the usual explanation of visibility: molecule hammering on molecule, ion on ion, photon on photon. Though the word 'photon' sounds as if it concerns a light-particle, it is anything but. It simply is a particle with all the energy and speed of light, but light in itself it is not. Light is what appears: the white, red or blue that we see. And here all reasoning comes to a halt. Nobody can explain the *nature* of red and how it differs from blue. They are absolute values, which no wavelength can explain. Yes, electromagnetic waves *correspond* with colours, but that does not mean they explain them. The nature of red or blue completely escapes us, and so does everything else that appears. For materialists, the world is in fact dark: no taste, no colour, no sound, nothing, just things hammering on each other. Even what occurs at the interior of things has become a matter of pure exteriority.

To this unbearable problem there seems only one solution: to at least partially shift the powers of visibility to the side of things. It's not that then we are suddenly able to explain consciousness, rather it includes the very impossibility in its speculative thought, instead of shelving the explanation to a date in the distant future.[5] Such a form of visibility and sensibility on the part of things means that whatever an appearance is, it must be fuzzier and considerably larger than the mere seeing of images, larger than cognition, since so many views of things are possible. A thing, then, must be more like a luminous cloud of proto-seeing, halo-like – and when we add knowability and sensibility, of proto-feeling and proto-thinking as well.[6] To make this work theoretically, we need to slip in another, more independent and encompassing form of appearing that enables a wide, possibly enormous range of appearances; as a form of appearing that accrues enough weight and substance to claim reality without having to retreat into Heidegger's dark regions of Being.

To return to the German philosopher's example we started with: it must mean that for the paper to appear as burnable, foldable, writable, or crumpleable it needs first to *appear as such*, as an *appearance by and of itself*. That would make it into an onto-appearance or a thing-appearance: a thing being visible before it is seen, thinkable before it is thought and sensable before it is felt. And let us take note of that suffix '-able'. The sheet of paper has no abilities or capacities without this pure, radiant, unrepresented presence. The rules of grace and the gift are simple: what is able is enabled, what we have is what is given, and what is given has to be returned. Thing-appearances, or what I propose to call figures, make a claim on consciousness before they enter human consciousness; in short, they *appear for themselves*, not, as they say in phenomenology, for us. Phenomenology's stumbling block, then, is not so much appearance qua appearance, but qua 'as'.

> *'a form of appearing that accrues enough weight and substance to claim reality'*

Why would it not be possible for the paper, and in a way all things, to appear in their own degree of fuzziness and indeterminacy? They might appear *to us* as determined, but that does not mean that *they* shine determinately. The term 'radiant' already suggests that the thickness – i.e., the reality, the *weight and independence* of a thing-appearance – is not the supposed depth between a fundamentally inaccessible, noumenal thing-in-itself and an accessible, phenomenal appearance-for-us. No, the thing-appearance is simply a massive, swirling cloud of images permeating all levels of scale, bending and stretching and keeping each other out of focus, merging into a powerful glow, a radiance that is vague yet wholly visible. A luminous cloud, or perhaps even better described with that beautiful contradictory word of Goethe's, *Nebelglanz*, meaning 'foggy shine' or 'shining fog': an opaque form of visibility.[7] The French, in their turn, would denote it with *je ne sais quoi*, a phrase derived from the earlier Italian *non so che*, used by Agnolo Firenzuola in his 1541 book *Delle bellezze delle donne*, *On the Beauty of Women*, in which he deploys an even more significant

term: *vaghezza*, relating vagueness directly to charm and movement.[8] In opposition to noumenal essences, then, figures are opaque without being dark, and in opposition to phenomena, visible without being clear.

Thing-appearances are luminescent all the way through, gem-like[9] and not so very different from Simmel's notion of radiant adornment.[10] In that regard there is a lot more depth and thickness to an appearance by and of itself than the single thin image that settles on our cortex. Why would the paper-appearance not itself be indeterminate, surrounded by a pure halo of millions of possible views blurring each other into an I-do-not-know-what? The too-much of things is built-in. The gift is by nature a matter of abundance. Mauss always stressed that there is a certain amount of surplus to every gift, and sometimes huge amounts; that is what makes the gift so different from what we call economy.[11]

The power of beauty – which is what we are discussing here: the Aglaean state of things – is that it escapes us completely. While we are captivated. With the notion of givenness, Husserl was spot on, except for the conclusion that he understood it as given-as, while from the perspective of gift exchange intentionality means precisely 'taken-as'. What Husserl meant as a theory of *Gegebenheit* was devised as one of *Genommenheit*, takenness, which runs parallel to the etymology of perception, as derived from the Latin *capere*, to take. Husserl's famous 'return to the things themselves'[12] could have meant a return to things given, or things giving themselves, instead of things taken. Things are appearances, insofar as they are bound to use the route of presence to gain access to the gift cycle. However, being gifts they necessarily stop halfway, *showing themselves for themselves*, since it is up to others to receive and return them. As Bergson phrased it: 'an image may *be* without *being perceived* – it may be present without being represented.'[13] Thing-appearances are visible before they are seen. Strictly speaking, the gift is *an offer*. Giving requires an *open hand*: the gift offers itself to be related, but is not related just yet.

Heidegger did try to change the meaning of *Gegebenheit* to a less determined concept. To open up the question of givenness he used the common German expression *Es gibt*, which means 'There is', allowing him to reconfigure givenness in the realm of ontology while at the same time acknowledging that it must rely on the gift structure, since the expression literally means 'it gives'.[14] When 'it' gives, the giving flows from that generalised background existence, similar to when we say 'it rains' or 'it snows'. This is a brilliant move. Yet it still falls short. When we make the given less determinate by referring to 'it', we make presence less determined than present, while in the structure of gift exchange the reverse happens. The gift, in the end, is a present, and that means the surplus is part of the present, and is not being withheld. The surplus, in all its thickness, is *superactual*,[15] a present that persists beyond the present of actuality, nebulously stretching actuality beyond itself, precisely as terms such as radiance, halo, *vaghezza*, *Nebelglanz*, and charm imply. There is only the superabundance of the given. Giorgio Agamben offers a perfect definition of superactuality when discussing the halo: 'One can think of the halo [...] as a zone in which possibility and reality, potentiality and actuality, become indistinguishable'.[16] We live in an absolute buzz, not just in the thick of things, but in the thickness of each thing-appearance. In that regard, the superactual might be viewed as an alternative to all those hypothetical hidden and dark reservoirs of reality such as the virtual or essences, concepts that seem to infer that things magically conjure up an appearance by pulling it out of darkness. How would the accessible be pulled out of the hat of the inaccessible? – that is impossible.

'The gift, in the end, is a present, and that means the surplus is part of the present'

So, the 'it' comes with the gift. Maussian gift structure would say: *the gift, determinately visible, gives itself indeterminately*. Even when Jacques Derrida and Jean-Luc Marion tried to import more of Mauss's conception of the gift into the phenomenological structure of givenness, they never truly succeeded in restoring the power of appearance without the 'as' attached to it. They remained full Heideggerians by saying the given is Being itself. And while moving away from the 'as', they mistakenly moved away from appearance as well. The paper, contoured and graspable, offers all its abilities simultaneously: burnability, foldability, crumpleability, including all other abilities that enable us. Our subsequent decision to crumple the paper or to keep on using it for writing, or burn it once and for all, is merely a matter of focusing and selection. A term like *vaghezza* does not signify a neutral, passive form of vagueness, but one that, via charm, elicits movement and action. Before we are able the paper is able; the paper enables us, that is, inhabits us, since the two share the same etymological roots. There is just no way we can understand the gift cycle without appearance by and of itself, that is, without shining, without Aglaea.

Heidegger would never have accepted the aesthetic implications of such a remark because it is aesthetic. Gift exchange falls under the auspices of the Graces: Aglaea's gift; Euphrosyne's pleasure; and Thalia's bloom. We have no right to speak of givenness, of 'it gives', 'Being given;' or the gift as such, without consulting them. Heidegger would only accept shining appearance (*Glanz*)[17] as a revealing of a deeper form of Being, as what he needlessly called 'truth' or 'authenticity', but not as an appearance by-and-of-itself. The cyclical loop of giving, receiving, and returning, as embodied by the graces, tells us how shining is not just the origin of the cycle, but how it is shared. And, in its turn, the processing of the gift through the pleasure of reception and the transformative phase of flourishing must lead back to the source. We do not know if the work precedes the shining or the reverse. In fact, the cycle of grace is

'at what point [does] work becomes performative? Maybe [...] when work turns into form [or] maybe when work turns into play?'

as much a circulation of shining as of work. The receiving by Euphrosyne – who is always depicted as imbibing – is a form of absorption, an internalisation, while the thanking by Thalia is one of bloom, a form of shining as much as that of Aglaea. The shining has to be processed, but then the processing in its turn takes on a shining. How often do we not enjoy the rhythms of skillful work over its mere product? Watching someone cook, sew a jacket, or play the piano with a grace that we might encounter as often in heavy-duty work, in the dexterity of cranes or the manoeuvring at a construction site, makes us wonder at what point work becomes performative. Maybe at the moment when work turns into form, instead of being what merely precedes form? Or maybe when work turns into play, since both grace and play speculate on the vagueness – and *vaghezza* – of things? Is it the shining that works, or the work that shines? Surely, their very ambiguity makes the cycle spin.

Automation and Hephaestus

To understand this properly we need to take a more thorough look at the mythology surrounding Aglaea, which is nothing less than a relentlessly logical and systematic philosophy of appearances and technology.

Generally speaking, mythology creates a realm of presence by forcing ideas and feelings to act as figures. Their machine-like connections and disconnections are as exact as any analytical system of thought. All the divine acts of intercourse – deception, metamorphosis, magic, death – can be written down in if-then programming language. The figural nature of mythology and the technological nature of language coincide with each other here. What are words other than figures? Let me add that, since the graces operate in cycles, their interactions are even more machine-like than the usual divine activity. At a certain point it will prove impossible to separate the blind workings of machinery from the visibility of appearances. That the name of the leading goddess of the Three Graces means 'shining' we have mentioned often enough, but it remains crucial. Aglaea is the one who gives. She personifies pure emanation, 'flowing over', i.e., pure 'spilling room', *Spielraum*, the room of play that also signifies wiggle room or the room to manoeuvre. Here we start to appreciate the full scope of Aglaea's mythology. Let's keep in mind that she is still called Charis, grace, in Homer. As part of the maiden triad, a triad working as covertly as similar triads such as the Horae and the Moirae, the cycles of the seasons and of fate, she is linked to Euphrosyne and Thalia, always depicted

in their round dance with their arms and hands interlaced. This is the image we know so well from Antonio Canova and Sandro Botticelli. But the real magic starts to dawn on us the moment we realise that the ancient Greeks married her, Aglaea, the divine figure of shining, to the smith god Hephaestus, the divine figure of the making of shining things. We suddenly realise how the mythologists mirrored the interlaced hands of the graces in the artisan's handling of things, how the rhythms of their dance are accompanied by the rhythms of his percussive hammering. Viewed from this perspective it all fits perfectly: the thing that shines becomes a shining thing that works, which turns into work that shines. That is, work that makes shining things. Yet, viewed from any other angle, it does not fit at all. The figure of Hephaestus does not comply in the slightest with these three ethereal creatures so completely absorbed in each other with their eyes and hands fully entangled.

'the mythologists mirrored the interlaced hands of the graces in the artisan's handling of things'

'The famous Lame One',[18] as Hephaestus is called by Hesiod, is a truly astonishing figure. Not simply as emerging from the collective imagination of the ancient Greeks, but as a figure so antipodal to Aglaea that it just boggles the mind how much insight their coupling reveals of the connection between phenomena and technology. Two facts immediately stand out when we consider the figure of the smith god in the context of the Graces. First, his marriage to Aglaea was an unhappy one. Second, he was born with club feet, a seemingly trivial detail that will prove essential. Hephaestus was the son of Hera and Zeus, thrown from the heavens into the sea because his mother was ashamed of his misshapen feet, to become the powerful smith god working with anvil and hammer. Hephaestus's existence is one that oscillates between disabled feet and able hands. His legs are so crooked that Homer describes them as *amphiguieis*, a word that sounds like amphibious and carries connotations with the transition between land and water, and that made Marcel Detienne and Jean-Pierre Vernant speculate on Hephaestus's resemblance to 'the crab and the seal, the creatures which half-belong to the element of the sea'.[19]

We should try to picture Hephaestus waddling around in his dark, firelit smithy like a seal on dry land, swaying heavily from one side to the other to find the last bit of stability on the outside of his feet. The forge is a magical place, a literal *Spielraum*, 'playroom', and Hephaestus has often been compared to a magician.[20] We find him surrounded by many of his creations, which span the whole range between art and technology, going as far as robots gifted with speech and made of gold. This is how Homer describes the scene:

On this the mighty monster hobbled off from his anvil, his thin legs plying lustily under him. He set the bellows

away from the fire, and gathered his tools into a silver chest. Then he took a sponge and washed his face and hands, his shaggy chest and brawny neck; he donned his shirt, grasped his strong staff, and limped towards the door. There were golden handmaidens also who worked for him, and were like real young women, with sense and reason, voice also and strength, and all the learning of the immortals.[21]

So, while Hephaestus waddles about, two golden robot-maidens mechanically move their limbs to keep pace, advising him on materials, handing him tools and making calculations. What a marvellous scene! Yet, at the same time, we wonder what is going on. *Two* robots because they mirror his two disabled legs? *Female* robots? Made of *gold*? We know how strongly the ancient Greeks obsessed with gleam and glitter – as always indicated by that word *charis*, grace – but golden automata? Gold is the peak of visibility, mechanics the peak of blind workings. Here they are presented as completely unified.

The figures demonstrate what the ancient Greeks considered inseparable but what we today consider utterly distinct: consciousness and automatism. Their idea was not to build machines and wrap them in some aesthetically agreeable form, as we would. No, consciousness and self-movement occur as much on the side of things as on our side. It is as if the Greeks invented a 'para-phenomenology' long before we arrived at the unsuffixed version. Like Daedalus, Hephaestus has mastered the whole range of *technē* between artistic appearances and mechanical workings, being the maker of the elaborate ornate shield of Achilles as well as automatons in the form of his golden attendants, even singing Siren-robots for the temple of Apollo[22] and silver watchdogs, 'immortal and ageless', to guard the king's palace.[23] Surely, today we have exceeded all the high expectations the ancient Greeks had of building robots, yet they seemed to have understood them far better than we do. Homer might as well have added a scene with the two automatons discussing technical problems between themselves, or a scene of a golden robot-girl taking one of the silver robot-dogs for a walk, maybe in a park scattered with emerald robot-trees and feeding diamond robot-swans in a pond of mercury. It is like their whole world is one where jewellery completely coincides with functionality, a world that works *because* it is beautiful, not one that works and is subsequently found beautiful as a bonus.

'a golden robot-girl taking one of the silver robot-dogs for a walk […] in a park scattered with emerald robot-trees'

Hephaestus is like us. He is the monkey fallen from the trees, swaying and swinging over the ground with his impossible feet, who suddenly discovers the magical ability to turn things into gold with his hands. His disability makes him turn the rhythms of his feet into the hammering of his hands. It is not some primitive, prototypical notion of making that allowed the ancient Greeks to put everything ranging from shining, gold embellishments to intricate workings in the single category of *technē*; the very notion of grace, of *charis*, requires it. If there is one word that connects *charis* to technics it is *daidala*, a 'cunningly made thing',[24] be it a golden automaton, an adorned dress, or the earrings with three berry-like drops worn by Hera with so 'much *charis* radiating from them'.[25] Sometimes it seems that Daedalus, the inventor of artificial wings as well as the labyrinth, is a mere epithet of Hephaestus, since both are masters of creating tools of movement as well as traps that eliminate movement. The realm of Hephaestus is one of absence and cunning as much as it is one of shining and bringing things into the light.

'Smith gods have often been related to invisibility […] because of the hidden nature of the forge'

Which is not all that surprising. Smith gods have often been related to invisibility, mostly because of the hidden nature of the forge and its dependence on the depths of the earth and mining. Besides, Hephaestus's club feet perhaps suggest an earlier, more archaic link to dwarfism,[26] which in mythologies all over the world has been associated with both forging and forgery – the respective arts of revealing and concealing – and even with the wearing of invisibility cloaks.[27] The etymology of the word 'dwarf' in fact refers as much to 'tiny' as to ideas of disability and 'deception'. Though its mythography is not the subject of our essay, the realm of hammering and fire reveals a dynamic between shining phenomena and the hidden workings of technology, a dynamic that transcends mere opposition and establishes itself as a sort of 'alternating current' of grace's workings. This is exactly what allows us to consider placing the smith god not just next to but between the Graces. When we add him to their triad the cycle takes on the form of a four-stage system that on the one hand correlates hidden, internal workings with the covert process of making and on the other hand correlates external appearances of objects with visible activity. That makes the system biaxial rather than bipolar. In that configuration the cycle proceeds from Aglaea (shining presence) to Euphrosyne (absorptive absence) to Thalia (flourishing presence) to Hephaestus (forging absence) back to Aglaea. Apparently, this suggests some kind of alternative to Heidegger's fourfold, an alternative where presence not only plays the role of emanation, but absence in its turn plays the intermittent role of absorption, instead of the origin (*Ursprung*), that dark vault of Being where all the essences are stored.

It can be claimed that presence can never directly communicate with presence and needs to go through a phase of darkening. That is, it goes from Aglaea's gift to Thalia's bloom via Euphrosyne's feeling. And this can also apply to Thalia returning the gift to Aglaea. Ergo, between those two figures of shining and bloom, we should position one of

darkening and seclusion. And, with its rhythmic hammering the Hephaestian forge reminds us of a sound studio, which is no accident since mythological sources offer dozens of connections between forging, rhyme, and singing.[28] Two forms of appearance pass through the darkness of transformations, one that transforms the object into an event, the other that changes the event back into an object. If the transfer of Aglaea's shining to the interiorised darkening by Euphrosyne's body in the form of pleasure requires room and manoeuvrability, then the return from Thalia's flourishing to Hephaestus's dark smithy necessitates the same play and *Spielraum*. The forge is the room of the red-hot glow. How would we hammer out anything without varying, manouevring and playing? Or, in the words of the ancient Greeks, *technē* requires *mētis*: cunning and crookedness.

Aglaea, who in the *Odyssey* is identified by the name Aphrodite,[29] cheats on Hephaestus with Ares, the handsome god of war, who is so subtly called to be 'sound of foot' (*artipos*). 'And when Hephaestus heard the grievous tale', writes Homer:

> he went his way to his smithy, pondering evil in the deep of his heart, and set on the anvil block the great anvil and forged bonds which might not be broken or loosed, that the lovers might bide fast where they were. But when he had fashioned the snare in his wrath against Ares, he went to his chamber where lay his bed, and everywhere round about the bed-posts he spread the bonds, and many too were hung from above, from the roof-beams, fine as spiders' webs, so that no one even of the blessed gods could see them, so exceeding craftily were they fashioned.[30]

The next time Aglaea and Ares see an opportunity to share the extramarital bed, the web catches them *in flagrante*. There is a farcical ring to the whole story with its many twists and distortions, but mainly because the strange monkey-like figure has been torn between visible beauty and invisible, intricate mechanisms. And only because he is torn does he make the full switch from *technē* to *mētis*. Following ancient Greek and Roman sources, Detienne and Vernant give dozens of examples of animals illustrating *mētis*, singling out the cunning fox and the slippery octopus for their powers of scheming, trickery, and deception.[31] Though *mētis* is often described as a form of *technē*, it is also its reverse.[32] If *technē* is the art of making things appear, *mētis* is the art of making things disappear, to trap them and catch them. Technology then is not just a way to produce, to lead things into the light, the reverse is just as necessary: a crooked way of making.

'Technology then is not just a way to produce, to lead things into the light, the reverse is just as necessary'

It seems only logical now that, similar to the necessary gap for grace to bridge between habit and inhabitation, we find 'disable' playing a crucial role in establishing the link between 'able' and 'enable',

the two etymological twins of habit and inhabit. Hephaestus's disability does not render him unable, on the contrary, but it does mean that there is no direct way of bridging the gap, only a crooked one. The fact that he is disabled puts the reciprocity between the prosthetic as an inside-out technology of extension and the mimetic as an outside-in art of fabrication at the heart of linking the two sides. He is the very personification of the mergence between art and technology. Neither of the two disciplines could have achieved this bridging by themselves, though we need to realise that, taken together, they happily undermine each other's moral principles. We get neither the pure prosthetics of purposeful extension, nor the pure mimesis of representation. Crookedness means a detouring of principles: the prosthetics it involves is one of wonder and the mimesis is one that is absorbed by workings.

'What matters is the coalescence of room and appearance.'

Hephaestus, then, is by no means a crook or destined to make crooked things. He sets a trap only because he suffers a rupture between things he fundamentally knows to be connected: grace and workings. Only because of his divinity does the story not turn into tragedy. He does however discover that to make things crookedly helps him to find the right way of making. The weakening of his legs goes straight into the making of things. His work could be misunderstood as the canonical example of *technē*, of work *behind* the appearance. However, *mētis* points at another possibility, namely the technology *of* the appearance. Thing-appearances bend the space around them, you cannot approach them directly anymore, only obliquely and crookedly. Even with all that hammering there is no way we can properly touch things, because with every beat images slip between us and them. In that sense, there can only be labour as part of the workings of appearances. According to Samuel Butler, the craftsman, 'who does not know that he knows',[33] works in this sphere beyond knowledge. Probably, Aglaea would not give any other answer when asked why she cheated on Hephaestus. After all, she acts in the same sphere of *je ne sais quoi*. The idea does not spring from maliciousness, but from the fundamental awareness that appearances work because of their vagueness. We act in the cloud of fuzzy images. Metaphysical distinctions between truth and falsehood are of no consequence at this point, since both are equally based on the power of appearances as such. What matters is the coalescence of room and appearance. The room for movement does not lie in the dark, it lies in the way a thing *appears as appearance*, what we for better or for worse termed a halo. A thing does not have a halo, it *is* a halo.

Such statements cannot be labelled as phenomenology anymore, since things shed as much light on us as we do on them. Indeed, a lot more. And certainly we would fail to classify this as a

phenomenology of technology either, which would always reason conversely, from the appearance of workings, while stressing the thing's intermediate position between us and the world. Instead of phenomenology, *phenotechnology* would be a more suitable term: a bent, crooked para-phenomenology that pursues a form of thought that wholly accepts phenomena, though without being framed or bracketed by human consciousness, since that would amount to takenness. Aglaea tells us that grace can only occur when the thing is *present as a present*. That is, when appearance has the status of a gift, which implies the possibility of sharing, in this case the sharing of thought. Such a phenotechnology would be the *working principle* of grace, yet would not be so crooked that it wishes to fully reverse consciousness and suddenly declare intentionality to be anchored in things. We might point at them, they do not point at us. Thing-appearances shine indeterminately, in all directions, not just towards us. As we have said, they give with open hands. They shine relationally, but *are not related as yet*, for that is up to the receiver and returner. We decide on *what* we see, the thing-appearance determines *that* we see. Thought looms on the side of things, certainly, but not in the form of a specified thought, not a thought with content or a consciousness 'of' something—in Bergson's words: things are phosphorescent.[34]

> *'Appearance and workings, present and absent, pheno- and -technology exist in a cyclical relationship where the one turns into the other.'*

The pheno-part of the equation immediately sets in motion the technology-part: thing-appearances are not absorbed and incorporated as seen, but as working, that is, technically as internal workings. Appearance and workings, present and absent, pheno- and -technology exist in a cyclical relationship where the one turns into the other. After all, how else is it possible that the world works in full visibility? We will never discover a basement with all the machines secretly controlling events. Nothing is hidden, and there is 'nothing behind phenomena', as Heidegger said.[90] Hephaestus knew that the art of the image and the art of workings are the same art, and for that art to work properly it has to adopt at least some crookedness.

Ornament and apparatus

To conceptually frame our understanding of the exchanges between appearance and technology, we should consider Hephaestus more fundamentally in relation to a figure we have encountered only briefly until now, Daedalus. Despite being such a well-known character, especially from Roman mythology and its adaptations during the second millennium, Daedalus barely plays a role in Homer's *Iliad* where he is mentioned once (and in the *Odyssey* not at all). On the other hand, words like *daidala, daidalon,*

daidaleos, are mentioned dozens of times, and almost without exception when describing the qualities of the works of Hephaestus.[35] The meanings of these words vary. In general they signify aspects such as being 'finely worked', 'embellished', 'much decorated', 'elaborate', or 'skillfully worked'.[36] Though the majority of the adjectives and verbs are used to appraise the design of armour in its different varieties, all Hephaestus's artefacts possess this specific quality. One would presume that, being the smith god, he is the only one of the Olympians who veritably labours and sweats,[37] since he creates all things ranging from Hera's earrings, to tripod robots, to Apollo's chariot, to thrones, shields, as we have indicated above. Yet 'labour' is not really the right word to describe his, nor Daedalus's efforts. What these two mythological figures do exceeds what is usually implied by that term. As is suggested by the meaning of *daidala*, the etymology of its translation 'elaborate' also shows that it concerns what we can only describe as a form of *overworking* or *extra work*. Hephaestus does not simply make a shield for Achilles. No, he makes it so ornate that the description alone in the *Iliad* takes 127 hexameter lines.[38]

As said, there is something in their work that cannot be appreciated through the notion of *technē*, nor even through that of *poiesis*. It is more subtle and elusive, as if *the elaborate itself works*, that is, as if the overworking has an effect usually ascribed to work. They do not simply create things that are released in the world to subsequently do their job as objects. It is as if the overworking literally goes through and beyond the object to make it do its work *as an appearance*. It is dazzling. We think of armour as a class of objects that can scarcely be considered as more utilitarian, while with the equipment Hephaestus fabricates the reverse seems to be the case. For Hephaestus, the fact that a sword needs to stay sharp or greaves need to be comfortable is irrelevant compared to their glittering effects on the battlefield.[39] In short, what makes it so remarkable is that the descriptions fail to follow the customary distinction between utilitarian work and aesthetic appearance. For Homer, for the gods and heroes the two are wholly entangled, even reversed. In the *daidala*, the 'cunning things' of Daedalus and Hephaestus, there is something very peculiar going on, something we can hardly put our finger on. Qualities and mechanisms we consider as completely opposite to one another are viewed as reversible, equivalent, or interchangeable.

A more detailed analysis of their works shows that we can discern two main categories of such reversals or transitions which have emerged as central to our phenotechnical argument: (a) the reversibility or equivalence of radiant appearances with workings produced by intricate mechanisms of machines, automata and even speaking statues; and (b) the reversibility or equivalence of tools of movement such as chariots or wings (e.g., for Daedalus's son Icarus) with those of stoppage such as the web that caught Aglaea and her lover Ares, or Achilles's shield, or the labyrinth that detained the Minotaur at

Knossos.[40] Conceptually speaking, this involves more than simply a broad definition of the overall category of *technē* that includes everything between engineering, the applied arts and the fine arts.[41] Instead of a range it would be better described as a matter of reversion, one form can turn into the other: embellishment is interchangeable with mechanics and tools of movement are interchangeable with those of stoppage. What seems to exist at the ends of the spectrum of design as opposites relates directly and intimately in a complex structure, if not in a truly cyclical system.

Those opposites connect in a realm of complexity and perplexity of what the ancient Greeks called *thaumata*, wondrous things, that equally set events in motion as well as put a halt to them. A small example:

> *Also she* [Pallas Athena] *put upon her head a crown of gold which the very famous Limping God* [Hephaestus] *made himself and worked with his own hands as a favour to Zeus his father. On it was much curious work [daidala], wonderful to see [thauma]; for of the many creatures which the land and sea rear up, he put most upon it, wonderful things [thaumata], like living beings with voices: and great beauty [charis] shone out from it.*[42]

In the phenotechnical realm of Daedalus and Hephaestus, cunning, wonder and grace exceed our standard notions of appearance, movement, and depth. Decorative patterns become so intricate and perplexing they cannot be considered as mere surface work, as existing merely in the flat realm of visibility. Nor can the complex machinery of automata be purely understood as the depth of intricate workings. What has depth works as an appearance and what is superficial has complex, far-reaching consequences, generating effects far outstripping the momentary or ephemeral.

'Decorative patterns become so intricate and perplexing they cannot be considered as mere surface work'

In the category of the reversibility of movement and stillness, the labyrinth is one of the most miraculous inventions ever conceived. Surely the reason why it has been studied so extensively, though interpreted in so many ways, is that it remains difficult to see how wondrous it actually is. One would almost say that it is the primordial figure: the *tropos* itself. Generally explained as some form of imprisonment of the Minotaur – the half man-half bull born from Pasiphaë's bestiality – the labyrinth transcends every notion of what we would normally call incarceration. In contrast to a prison where one is prohibited from moving, one is encouraged to move about in a labyrinth. The walls do not put a halt to movement, they guide it. The labyrinth is infinitely more cunning than any architectural confinement created by four walls, a heavy door and a key. This is especially true of the classical Cretan labyrinth that differs fundamentally from a maze with its forkings and

'the classical Cretan labyrinth […] consists of a single circuit of loopings and turnings'

dead ends, since it consists of a single circuit of loopings and turnings.[43] One could walk in and out of it, and that simple fact turns the implied idea that the Minotaur is too dim-witted to find the exit invalid. Closer to the truth is that, as a figure and not even as a built structure, the labyrinth abolishes all opposition between movement and stoppage purely through the figure of turning itself. It is a passage that leads back to its starting point, not to the end. And that is why the Minotaur is trapped: he is literally not going anywhere. Any position is as good as any other, they are indifferent. He is conceptually trapped, not physically. By coiling up the architectural element of movement, the corridor, making it lead from A to A instead of to B, turns from a movement-figure into a figure of stoppage.

Looking at the twists and turns of the circuit it reminds us of bowels, and in that regard the progression through the labyrinth coincides with a form of swallowing, following a tract that has all the characteristics of a digestive system. In the mythology of the Minotaur, this is emphasised by his sacrificial devouring of young Athenians. The myth of the labyrinth resembles that of Jonah being swallowed by the whale,[44] or the various descents into the underworld by fearless heroes such as Orpheus or Aeneas. Scholars have often located the origins of the Cretan labyrinth in the subterranean caverns of the island, such as those of Gortyna.[45] This might seem far-fetched when thinking of the high level of the labyrinth's figural stylisation. But as a form of swallowing and interiorisation it seems plausible. It does not require too large a leap of the imagination to assume a prehistory of cults and rituals involving bovine spirits, the cycles of the heavens, and the religious use of caves. After all, mapping out the cycles of heavenly bodies results in labyrinthic diagrams, spiralling back and forth around a centre, which are well-known all over the world.[46] The utter darkness of caverns, the many windings that made Socrates compare underworld architecture to that of the labyrinth,[47] the possibility that the word *labyrinthos* might be derived from words for 'stone' or 'quarry' in Asia Minor, and the many spiral dances such as the Hainuwele that end with a young girl in the centre being buried alive. All this indicates that there are strong arguments for a fundamental relationship between labyrinths, caves, and the depths of the earth.[48]

One of the arguments we will be pursuing – in a manner that is more conceptual than historical – is the shared relationship between the two main types of figure involved in its mythology: the transitory figure of the half house-half trap inhabited by the transitory figure of the Minotaur, half man-half bull. The horizontal windings of the labyrinth are essentially organised around the vertical figure of the Minotaur. His name is, in fact, *Asterion*,[49] star, an unexpected denomination for what is mistakenly

considered a monster. More fitting would be to regard him as what in theology is called a *transfiguration*, a radiant figure of transition. Compared to the confusion created by the Jerome Bible on the translation of the rays of light (*qeran*) emanating from the head of Moses which ended up as horns in the sculpture of Michelangelo, we should understand the horns of the Minotaur similarly as rays of light.[50] Again, we discover connections between armour and shining. In many old and contemporary languages there exist etymological connections between sunrays and arrows.[51] Likewise we could regard the spikes on the head of Apollo, for example, as horns or antlers. In similar vein, such human-animal transitions played a crucial part in shamanistic rituals of transfiguration, either by wearing horned masks or the actual hollowed heads of horned animals during their percussive dance.

It is generally agreed that the original labyrinth never was a physically built structure of walls, but an *orchestra*, i.e., a dance floor, probably covered by spiralling motifs that guided the dance moves mimicking the solar trajectory along the sky.[52] In the same context, scholars have often noticed a certain ambiguity between the figures of the Minotaur and its slayer, Theseus. In fact, the Minotaur might be perceived as a temporary transfiguration of Theseus who proceeds into the labyrinth, transforms into a man-bull and changes back to his heroic self when finding his way out with the help of Ariadne's thread. That would make the labyrinth a rite of passage.[53] This hypothesis is substantiated by the fact that Theseus, when returning to Delos to celebrate his victory over the man-beast, dances the *choros*. It is a round dance that functions as an imitation of the circling passages in the labyrinth, 'consisting of certain rhythmic involutions and evolutions', as Plutarch writes.[54] The ambiguity of the labyrinth conceived both as a dance and as a building offers one more hint to the views of the ancient Greeks concerning the reversibility of movement and stoppage. Eight hundred years before Plutarch, that connection had already been established by Homer in the only passage where he mentions Daedalus: 'And on it, the famous Lame One [Hephaestus] embroidered [*poikil*] a circle dance like the one Daedalus fashioned in Knossos for braid-adorned Ariadne'.[55]

'The ambiguity of the labyrinth conceived both as a dance and as a building'

In addition to presenting us with a direct connection between Hephaestus and Daedalus, between the circular windings of the labyrinth and the circle dance of the *choros*, we encounter here another connection that serves as an introduction to the second category of reversals: between embellishment and workings. Circle dance, spirals, scrolls, braids, locks, labyrinths, it all merges into a world of continuous perplexity that directly undermines the common belief that superficial

appearance and technical workings are to be considered antithetical. The phenotechnology we discovered in the realms of Daedalus and Hephaestus, moreover in that of Hephaestus and Aglaea, transcends this opposition, by reversal more than by mergence. In his *Labyrinth-Studien* of 1950 Karl Kerényi shows how the figure of the labyrinth oscillates between dance figures and ornamental figures such as meanders and scrolls, thereby suspending the fundamental distinctions between movement and appearance.[56] The figure, in all its abstraction and linearity, can as easily be organising a dance on the horizontal plane of motion as an ornament on the vertical plane of vision.

To investigate such reversals we should begin by looking at the origins of the word 'ornament'. These lie in the Latin *ornamentum*, which was derived from *orno*, 'to get ready', 'to prepare', or 'to equip' It does not take a lot of effort to imagine how such a connection between readiness and ornament would have troubled Martin Heidegger. It pushes his notions of equipmentality (*Zeugseins*) and readiness-to-hand (*Zuhandenheit*) back into the realm of presence. The readiness of *Zeug*, or in fact the German *Gerät* – a word that literally links to being ready, like the Dutch *gereedschap*, 'readiscape', which also signifies tools – cannot be limited to the patience of hammers, the sharpness of knives, and the humming of computers. It should be expanded to all thing-appearances, to the readiness of all things 'made up'. Other connotations of *ornamentum* support this idea, such as 'apparatus' for example, a word drawing together *ad-* and *-parare*, again literally signifying 'to make ready'. It shows how appearance and technology are fundamentally linked in a way that fully adheres to the paradigm of Hephaestus that links embellishment and workings. And that paradigm is nothing short of radical, as we can see in the following passage from the *Iliad*: 'She found him [Hephaestus] busy with his bellows, sweating and hard at work, for he was making twenty tripods that were to stand by the wall of his house, and he set wheels of gold under them all so that [*ophra*] they might go of their own selves [*automatoi*] to the assemblies of the gods, and come back again—marvels [*thauma*] indeed to see.'[57]

Only after several rereadings does it starts to dawn that the text actually states that wheels being cast in gold and tripods being able to move by themselves are not two different properties *but a single one*. The Greek word *ophra*, meaning 'in order that' or 'so that' signifies that the gold itself, because of its shining and its extra work enables the tripods to move. The whole idea that shining and movement are directly linked shocks our rational beliefs. While we would generally ascribe such powers to magic – and, as said, Hephaestus has often been described as a magician – we should avoid the use of such words, because they obscure the idea's intrinsic conceptual structure. The meaning is more common than it appears at first sight. For instance, the connection between shining and movement is not so different from the way we wear bracelets, rings, or earrings: not only as extensions of movement and creating an

appearance out of movement, but conversely, . If a moving hand shows itself by the brilliance of a ring, then that brilliance creates a readiness of the hand to move. A bracelet, tinkling as it is made of interlocking rings or links of metal, flickering in the light as it is set with precious, faceted stones, creates a sphere around the hands and arms. This is a halo that is not just a sphere occupying the realm of the eyes but *a tool of motion*, a readiness and a readiscape. As to the word 'ready', we should realise that it stems from the same Proto-Indo European root, *reidh-*, as the English 'ride'.

'extending appearances so as to enable movement'

Parergon and Hypergon

To extend the phenotechnical analysis of ornament we should, as an introductory exercise, apply its ideas to some of the core concepts associated with the subject in art history and architectural history. The conceptual distinction between structure and ornament is so deeply ingrained in both disciplines, that such an analysis might prove more than opportune. Starting with its occurrence in art history, we should recall that ornament is traditionally conceptualised by the term *parergon*: a term translated in German as *Beiwerk*, brought to prominence by Immanuel Kant in his third Critique[58] and by Aby Warburg in the celebrated analysis of Botticelli's *Birth of Venus* in his doctoral thesis of 1893.[59] *Parergon* relates to *ergon* as *Beiwerk* relates to *Werk*, that is, as by-work to work. In that view structure is doing the actual work, while ornament is merely doing a job on the side. However, our notion of overwork – *hypergon* –should be contrasted as sharply as possible to that of by-work. The fact that ornament is often dependent on structure does not mean that structure conceptually precedes ornament. Though the word 'dependent' indicates, again etymologically, a position of 'hanging from', as in pendants, ribbons, garlands, tresses, tendrils, and the like, it does not mean at all that ornament is doing a side job. In fact it is doing the actual work of making things appear by transfiguration. Things move beyond their own contours through elaboration. Ornament is deeply connected to transcendence.[60]

Let us just have a short look at the *Birth of Venus*. She stands on her shell, having been born from the foam of the sea in a mature state, and she moves towards us. It is the same towardness of Venus as in the *Primavera*. She radiates and shines, which is exactly what beauty is: object turning into movement. Naturally, Venus stands in *contrapposto*, she does not stand on her shell with legs apart as on a surfboard, there is as much external movement (personified by Zephyr who blows his western wind from the left side of the painting) as there is internal movement, such as the bending of her knees, arms and fingers. In his analysis Warburg traces the use of motion back to the architect Leon-Battista Alberti, whose book on painting, the *Libro della Pittura*, instructed painters to add movement of the 'hair, the locks, and garments' in order to make the scene pleasing to the eye.[61] In doing so, Warburg follows Alberti's notion of ornament, which he, being a classical architect, considered as 'attached or additional', similar to Winckelmann's later distinction between essential structure and ornament.[62] Famously, Warburg applies the architect's advice when conceptualising the *Birth of Venus* with the term *bewegtes Beiwerk*, generally translated as 'moving accessory'.[63] By following the conceptual, if not moral distinction between structure and ornament, so typical for Alberti, Warburg now makes the same distinction in the standing of Venus on her shell. We should italicise *standing*. Her limbs do the *de facto* structural work, while in the attempt to become pleasing the hair is animated by the external agent of the wind, doing the by-work of an add-on.

With all due respect, this old analysis is seriously flawed. It is a *representational analysis* that takes the painting as a literal depiction of a young woman standing and her hair waving about. Warburg's is not a *figurational analysis* that takes the painted image as an appearance by and of itself, that is, standing by itself as a figure. In that regard, all paintings need to be taken as a reality in themselves, not as an illusory image of an external reality existing outside of the frame. Examining the *Birth of Venus* as such, figurally, we do not observe any form of structural rigidity that would allow us to compare her limbs to architectural members such as columns. On the contrary, we see movement everywhere, even in the smallest part: the bending of the knee and the neck, the opening of the fingers, the lifting of the heel, the sideways gazing of the eyes, the waving tendrils of the hair. Bending, opening, lifting, gazing, waving: all performative terms, unequivocal indications of actions and movements *that converge in her standing still on the shell*. As with all figures of contrapposto – what Leonardo called the 'grace in the limbs'[64] – the flexing movements, the curling, the bending, the various figures configure around the ghosted axis of standing. From an ontological viewpoint – and ontology is always a matter of stoppage and stance[65] – we are only halfway, however. Since Venus steers towards the shore a second stoppage is about to happen: her being covered with Thallo's ornate mantle. And so there are two movement-stoppages occurring simultaneously. The first is a *downward* directed standing organised by those moving limbs; the second a *forward* directed movement that comes to a halt at the shore when Venus is dressed. There is no better example of grace and beauty driving the figural turn of *tropos*. The figure of grace is created in the downward action of standing turning into the forward motion of

'What is considered ornament is in fact structure. And what is considered pliancy and weakness comes down to actual rigidity and strength.'

appearing. What is usually considered to be by-work, then, is the main work. Venus does not stand despite but because of the ornament.[66] What is considered ornament is in fact structure. And what is considered pliancy and weakness comes down to actual rigidity and strength.

It is no different with the case of the Greek column. Since it so overtly deals with the same issues of standing and ornament, it begs for a phenotechnical analysis. Traditionally, we distinguish the structural work done by the shaft of a column from the aesthetic work done by its ornament, especially the curling acanthus leaves on the capital at the top of the column in Corinthian mode. Again, as with the figure in contrapposto, we should ask ourselves if we can so easily separate the rigidity of structure from the weakness of ornament. When we imagine the column made of jelly, for instance, we would quickly discern typical distortions when a load is placed on it as that of a heavy beam. Next to the curling at the top we would observe a swelling in the middle area and a rippling at the bottom. That is, we would see the acanthus leaves forming at the top, the sideways swelling midway down the shaft: a swelling the Greeks called *entasis*,[67] and the undulating moulding, curving inward and outward at the base. In short, the combination of local weaknesses – and let's keep in mind that ornament has traditionally been associated with weakness: curling leaves and vines, bent scrolls, and volutes – allows the column to absorb the load. A very precise set of local, sideways movements constructs the column's standing upright, as well as the reverse, stance turning sideways as a form of heliotropism, or *phenotropism*. Or alternatively *phenotropy*, the entropy of appearing. The work being done is not just the downward directed work with us looking at the side of it; no, *the column turns towards us*, downwards and sideways make a single figure: elaboration spilling over while taking over the labour of structure.

The appearance is doing the work. This is work that we cannot analyse as the by-work of Alberti anymore, rather as the extra work or the overwork of Hephaestus. *Parergon* is of the same nature as the extra work we encountered in *daidala* and *thaumata*, and therefore the necessary work; not some form of leisure or relaxation after work, but the necessary relaxation of work. A column coming down on the ground without its profiles and ripplings would be like Venus landing ashore without clothes, without visibility. It would only be doing half the job: standing but not appearing. The external, transcendent wind of Zephyr and Venus's internal, coordinating limbs are not two distinct movements, but different stages of one movement that turns and spills over into the visible and loops back into her body. *Hypergon* would be the more fitting term: the extra effort put in during the making which makes the work of the object effortless; to Venus it literally feels as if she has the wind at her back, which is another way of saying it concerns unanchored grace. To her it feels as if she is being moved, to us it looks as if she is self-moving.

And, naturally, the *Birth of Venus* is hanging on a wall. Although it is the last thing an art historian would consider, the ties with the wall should be viewed as primary, as its conceptual origin. Botticelli seemed aware of this in more than one way. The standing of Venus coincides wholly with that of the wall, while turning it into an appearance. Because of the hanging her contrapposto is shared with the wall. That first. Second, and more awkward, is the tilted, almost plan view of the sea's surface running parallel to the columnar verticalism of the trees on the right, echoing the original turn in the structure of the painting. The awkwardness in Botticelli's painting is a sign of construction and figuration: it starts by acknowledging architectural verticality, only to turn it into appearance. The painting makes the wall glow, which is the work of paintings in general. We have been taught to consider a painting as an opening in the wall, a window,[68] as a place where the wall is absent, mainly by suggesting depth behind it, as in the case of perspective. Yet the reverse is the case: it makes the walls shine and move towards us. If there is any depth, it is *in front of the work*. It would be nonsensical to deny the full physical and conceptual dependence of paintings on the verticality and stillness of walls. More importantly, the exchange works in both directions: the wall needs the horizontal glowing of the work of art, and the work requires the vertical stillness of the wall, as the phenotropical figure requires both directions. The work consists as much of standing in one way as of showing itself sideways, in short, a twisting or turning of work—the formula of figuration.

'ornament has traditionally been associated with weakness: curling leaves and vines, bent scrolls and volutes'

The painting is the transformation of the wall, and in that regard, a form of decoration or what Gottfried Semper called *Bekleidung*, a word that implies clothing as well as cladding.[69] The ornate mantle Thallo is about to cast over Venus's nudity is none other than the dressing of the wall. The everlasting suspense of that moment is perfect: it shows that the figure is neither the naked nor the clothed state of the wall but its very transfiguration: a suspense, i.e., a hanging becoming standing, that lies at the very origin of architecture itself. In the famous §62 from *Der Stil*, Semper makes the extensive argument on the textile origins of architecture, which he characterised as 'the mystery of transfiguration' and chronicled as a rigorous phenotechnical operation:

The question now is what became of our principle of dressing [Bekleidungsprinzip] after the mystery of transfiguration was complete: as the essentially material, structural, and technical notion presented by the enclosure assumed monumental form, from which true architecture arose [...] The festival apparatus [Festapparatus] – the improvised scaffold with all its splendor and frills that specifically marks the occasion

for celebrating, enhances, decorates, and adorns the glorification of the feast, and is hung with tapestries, dressed with festoons and garlands, and decorated with fluttering bands and trophies – is the motive *for the* permanent *monument* [Denkmal], *which is intended to proclaim to future generations the solemn act or event celebrated.*[70]

'turning space into the depth of the surface.'

Note that the source of the transfiguration is not the actual image on the cloth, but the transition of textile into stone that turns into the appearance of architecture. That leaves us with the following construct: the flexible figures from textile, i.e., the knotwork, the weaving, the interlacing, and the resulting polychrome patterns that guide the rituals, ceremonies, and festivals – the collective events of gift exchange and abundance – are now embedded in stone, transfigured. In Hephaestian terms: the *labour* of weaving has now become the *elaboration* of carving,

and the moment of abundance has become permanent. We should therefore speak of a double transfiguration:

(a) from the movement of figures, interlacing into a configurational pattern to be carved from wood or stone; and

(b) from that carved, vertical wall into a pattern radiating sideways into the sphere of life.

That is not a continuous, uninterrupted movement, because it occurs via the eternal moment of suspense, a movement transfigured via the stoppage of time. It is what Semper calls a *Denkmal*, which is as close as we can get in architecture to consciousness. It also occurs via the vertical stance of the architectural element. What was initially hung now radiates from the wall as sheer readiness, making space the product of the wall, that is, turning space into the depth of the surface. The whole figuration process would have no value without the transfiguration of materials from literal to figural, and the transfiguration of space from neutral stasis to wholly charged with motion. That is, motion waiting to be transferred to us.

Notes

1. See my first chapter 'The Grace Machine: Of the Figure and the Gap', in *Grace and Gravity: Architectures of the Figure* (London: Bloomsbury, 2020), and my 'Charis and Radiance: The Ontological Dimensions of Beauty', in *Giving and Taking: Antidotes to a Culture of Greed*, ed. by Joke Brouwer and Sjoerd van Tuinen (Rotterdam: V2_ Publishing, 2014).

2. Edmund Husserl, *The Idea of Phenomenology*, trans. by William Alston and George Nakhnikian (1907; repr. The Hague: Martinus Nijhoff, 1964).

3. Martin Heidegger, *Grundprobleme der Phänomenologie*, Gesamtausgabe 58 (1927; repr. Frankfurt a. M: Kostermann, 1993), p. 5. Quoted from: Jean-Luc Marion, *Being Given: Toward a Phenomenology of Givenness*, trans. by Jeffrey Kosky (Stanford, CA: Stanford University Press, 2002), p. 19.

4. Heidegger, *Being and Time*, p. 98.

5. This has led to the philosophical position called 'mysterianism', which holds that because of its very nature consciousness can never be explained. See also: Colin McGinn, 'All Machine and No Ghost?', *New Statesman*, 20 February 2012.

6. A reference to the 'proto-phenomenal' qualities of entities as theorised by David Chalmer's 'panprotopsychism'. See: David Chalmers, 'Panpsychism and Panprotopsychism', in

Consciousness in the Physical World: Perspectives on Russellian Monism, ed. by Torin Alter and Yujin Nagasawa (Oxford: Oxford University Press, 2015), pp. 246–76.

7. See the first stanza of Goethe's 1778 poem 'An den Mond': 'Füllest wieder Busch und Tal / Still mit Nebelglanz / Lösest endlich auch einmal / Meine Seele ganz; Breitest über mein Gefild / Lindernd deinen Blick, / Wie des Freundes Auge mild / Über mein Geschick'.

8. Agnolo Firenzuola, *On the Beauty of Women*, trans. by Konrad Eisenbichler and Jacqueline Murray (1541; repr. Philadelphia, PA: University of Pennsylvania Press, 1992), p. 35. Firenzola refers to Petrarca's use of *vaghi*, 'wandering', a connection we recognise from the word 'vagabond'. See also: Italo Calvino, *Six Memos For the Next Millenium*, trans. by Patrick Creagh (New York, NY: Vintage Books, 1993), p. 57.

9. A reference to Walter Pater's famous remark made in the conclusion of the first edition of *The Renaissance*: 'To burn always with this hard, gem-like flame, to remain this ecstasy, is success in life.' See: Walter Pater, *The Renaissance*, p. 189.

10. Georg Simmel, 'Adornment', in *Simmel on Culture*, ed. by David Frisbee and Mike Featherstone (London: Sage Publications, 2000 [1908]), p. 209: 'Besides its formal stylization, the material means of its social purpose is its *brilliance*. By virtue of this brilliance, its wearer

appears as the centre of a circle of radiation in which every close-by person, every seeing eye, is caught.'

11. Mauss, *The Gift*, pp. 44, 92.

12. Edmund Husserl, *Logical Investigations*, 2 vols, trans. by J. N. Findlay (1901; repr. London: Routledge, 2001), Vol. 1, p. 4. In original German: '[...] auf die 'Sachen Selbst' zurückgehen'.

13. Henri Bergson, *Matter and Memory*, trans. by Nancy Margaret Paul and Scott Palmer (1896; repr. New York, NY: Zone Books, 1991), p. 35. Interesting references are made in: Jean-Paul Sartre, *Imagination*, trans. by Kenneth Williford and David Rudrauf (London: Routledge, 2012), pp. 39–42, and in: Gilles Deleuze, *Foucault*, trans. by Sean Hand (Minneapolis, MN: University of Minnesota Press, 1988), p. 52.

14. Heidegger, *Being and Time*, pp. 26, 255, 464.

15. I introduce the term 'superactual' in the essay 'Charis and Radiance', in *Giving and Taking*, pp. 118–49.

16. Giorgio Agamben, *The Coming Community*, trans. by Michael Hardt (Minneapolis, MN: University of Minnesota Press, 2005), p. 55.

17. Quoted from: Richard Capobianco, 'Heidegger on Heraclitus: Kosmos/World as Being Itself', *Epoché: A Journal for the History of Philosophy*, 20:2, spring (2016), 468.

18. Hesiod, *Theogony,* p. 945.

19. Marcel Detienne and Jean-Pierre Vernant, *Cunning Intelligence in Greek Culture & Society*, trans.

by Janet Lloyd (1974; repr. Hassocks, Sussex: Harvester Press, 1978), p. 273. Oddly, the term *amphigueis* that signifies 'crooked feet', is often translated by 'ambidextrous' to indicate the smith god's very able hands. See also: *Iliad* 14.241.

20. See also: Marie Delcourt, *Héphaistos ou la légende du magicien* (Paris: Les Belles Lettres, 1957). Mircea Eliade has often discussed the connection between smiths, smith gods, and magic. See, for instance, his *The Forge and the Crucible: The Origins and Structure of Alchemy*, trans. by Stephen Corrin (1956; repr. Chicago, IL: University of Chicago Press, 1997).

21. *Iliad* 18, 411–16.

22. Pausanias 10.5.12.

23. *Odyssey* 7. 2–4.

24. See also: *daidala*, general term for clever, cunning, embellished, elaborate, ornate, intricate, etc. See Sarah P. Morris, *Daidalos and the Origins of Greek Art* (Princeton, NJ: Princeton University Press, 1992), p. 12: 'appropriate to armour and jewellry'. *Iliad* 18.400: 'he made many *daidala*, with his clever skills'.

25. *Iliad* 14.183. The expression was customary in the Homeric epics: *charis apelampeto polle*. See also: Hesiod, *Theogony*, p. 584. See also: Morris, *Daidalos*, p. 26.

26. There is some proof that earlier images in ancient Greece depict Hephaestus as well as his sons, the Cabeiri, as dwarfs. See, for instance: Herodotus, *The Persian Wars,* 3.37.

27. For the connection between dwarfs and smith gods in Norse mythology, see: Lotte Motz, 'The Craftsman in the Mound', *Folklore*, 88:1 (1977), 46–60. See also: Eliade, *The Forge and the Crucible*, p. 98; Lois Bragg**,** *Oedipus Borealis: The Aberrant Body in Old Icelandic Myth and Saga* (Madison, OH: Fairleigh Dickinson University Press, 2004), pp. 154–6.

28. Eliade, *The Forge and the Crucible*, pp. 98–101.

29. Hephaestus is married to Charis (Aglaea) in the *Iliad* (18.382) and to Aphrodite in the *Odyssey* (8.267).

30. *Odyssey* 8. 272–82.

31. Detienne and Vernant, *Cunning Intelligence*, pp. 34–41.

32. See also: Debra Hawhee, *Bodily Arts: Rhetoric and Athletics in Ancient Greece* (Austin, TX: University of Texas Press, 2004).

33. Samuel Butler, *Life and Habit* (1878; repr. London: Wildwood House, 1981), p. 4.

34. Bergson, *Matter and Memory*, p. 27.

35. Françoise Frontisi-Ducroux, *Dédale: Mythologie de l'artisan en Grèce ancienne* (Paris: La Découverte, 1975), pp. 29–34.

36. Morris, *Daidalos*, pp. 3–35.

37. *Iliad* 18.372. See also: Jan Bremmer, 'Hephaistos Sweats, or How to Construct an Ambivalent God', in *The Gods of Ancient Greece: Identities and Transformations*, ed. by Jan Bremmer and Andrew Erskine (Edinburgh: Edinburgh University Press, 2010), pp. 193–208.

38. *Iliad* 18.478–608; Morris, *Daidalos*, p. 12.

39. *Iliad* 11.15–46; Morris, *Daidalos*, p. 7.

40. See also: Mircea Eliade, *A History of Religious Ideas*, Vol. 1: *From the Stone Age to the Eleusinian Mysteries*, trans. by Willard Trask (Chicago, IL: University of Chicago Press, 1978). Eliade calls Hephaestus 'at once a binder and a looser' (p. 266).

41. Strictly speaking, the definition of *technē* does not include the fine arts and had a particularly low status in ancient Greece. I include the fine arts here to indicate all forms of making and fabrication.

42. Hesiod, *Theogony*, pp. 579–84.

43. W. H. Matthews, *Mazes and Labyrinths* (London: Longmans, Green and Co., 1922); Hermann Kern, *Labyrinthe: Erscheinungsformen u. Deutungen* (München: Prestel, 1982).

44. A comparison made by Gaston Bachelard in his *Earth and Reveries of Repose* (Dallas, TX: The Dallas Institute Publications, 2011), pp. 175–6.

45. Matthews, *Mazes and Labyrinths*, pp. 22–6; Kern, *Labyrinthe*, p. 48; Karl Kerényi, *Labyrinth-Studien* (Zürich: Rhein Verlag, 1950), pp. 34–6; Giulia Sarullo, 'The Cretan Labyrinth: Palace or Cave?', *Caerdroia: The Journal of Mazes and Labyrinths*, 37 (2008), 31–40. Hephaestus, when thrown down from the heavens by his mother Hera onto the island of Lemnos, was taken up by Thetis and brought up in a sea cave while being trained as a smith and artisan.

46. Kern, *Labyrinthe*, pp. 30–3; Jan Pieper, *Das Labyrinthische* (Braunschweig: Vieweg & Sohn, 1987), p. 45. See also: W. F. Lethaby, *Architecture, Mysticism and Myth* (New York, NY: Macmillan & Co., 1892), ch. 7, 'The Labyrinth'. Also: Arthur Bernard Cook, *Zeus: A Study in Ancient Religion* (Cambridge: Cambridge University Press, 1914), p. 479: 'The labyrinth was an *orchestra* of solar pattern presumably made for a mimetic dance.'

47. Plato, *Phaedo* 108a.

48. Kerényi, *Labyrinth-Studien*, ch. 7: 'Gebäude-Höhle', pp. 34–6; Jan Pieper, *Das Labyrinthische* (Braunschweig: Vieweg & Sohn, 1987), pp. 137–80.

49. Pausanias 2.31.1.

50. Exodus 34.29 and 35; Morris, *Daidalos*, p. 185.

51. In Old High German, *strala* means 'ray' as well as 'arrow'. In Old English, the word for 'arrow' was *strael* (similar to the Dutch *straal*), which also meant 'ray', 'spurt', and 'radius'. In *The Childhood of Man* (New York, NY: Meridian Books, 1960), Leo Frobenius dedicates an extensive chapter on how sun mythology runs parallel with 'arrow myths' (ch. XXI, 'On the Path of the Sun'), pp. 325–9.

52. Kern, *Labyrinthe*, pp. 49–56, and Cook, *Zeus*, p. 479. In Minoan Crete the sun was personified by a bull god.

53. Mircea Eliade, *Patterns in Comparative Religion*, trans. by Rosemary Sheed (Lincoln, NE: University of Nebraska Press, 1996), p. 381.

54. Plutarch, *Plutarch's Lives*, trans. by Bernadotte Perrin. Loeb Classical Library 46 (Cambridge, MA: Harvard University Press, 1914): *Theseus* 21.

55. *Iliad* 18.590.

56. Kerényi, *Labyrinth-Studien*, ch. 11: 'Ornament-Sinnbild', pp. 51–6. Earlier than Kerényi, Arthur Cook made a similar argument in his study *Zeus* of 1914, likening the labyrinth to either a Cretan palace decorated with meandering figures or even to the coiled figures themselves (pp. 474–6), to then develop the assertion that the meander was a symbol for the revolutions of the sun, mimicked by a dance ceremony. See note 46.

57. *Iliad* 18.375.

58. Immanuel Kant, *Critique of Judgment*, p. 57: 'Even what is called ornamentation (parerga), i.e., what is only an adjunct, and not an intrinsic constituent in the complete representation of the object, in augmenting the delight of taste does so only by means of its form.'

59. Aby Warburg, *The Renewal of Pagan Antiquity: Contributions to the Cultural History of the European Renaissance*, trans. By David Britt (Los Angeles, CA: Getty Research Institute, 1999), pp. 89–156. See also: Jacques Derrida, *The Truth in Painting*, trans. by Geoff Bennington and Ian McLeod (Chicago, IL: University of Chicago Press, 1987), ch. 1.II: 'Parergon', pp. 37–82.

60. There exists extensive documentation of the

connection between ornament and transcendental experience. For instance, Walter Benjamin who compared the aura of hashish to an ornamental halo (*ornamentale Umzirkung*) or Henri Michaux who termed his mescaline-induced visions a form of 'ornamentogenesis'. We find similar links between ornament and transcendence in the works of Aldous Huxley, Silas Weir Mitchell, Heinrich Klüver, and Oliver Sacks.

61. Warburg, *The Renewal of Pagan Antiquity*, pp. 95–6.

62. Alberti's famous description of ornament as '*afficti et compacti*' in *On the Art of Building in Ten Books*, 6.2.93–94. In the English translation it says: 'attached or additional' (p. 156). Winckelmann's distinction stems from his *Anmerkungen über die Baukunst der Alten* (Leipzig: Johann Gottfried Dyck, 1762), a book split in two parts: *Das Wesentliche der Baukunst* ('The Essential in Architecture') and *Die Zierlichkeit* ('Adornment').

63. Warburg, *The Renewal of Pagan Antiquity*, p. 96.

64. Leonardo da Vinci, 'On Painting', in *The Literary Works of Leonardo da Vinci*, trans. by Jean-Paul Richter (London: Samson Low, Marston, Searle & Rivington, 1883), para. 592, p. 295.

65. The etymological meaning of the word 'existence' is 'to stand forth', as it is derived from *ek sistere*.

66. This would sound better in Dutch: 'Venus staat niet *ondanks* ('unthanks') maar *dankzij* ('thanks to') het ornament'.

67. Vitruvius, *On Architecture,* 2 vols, trans. Frank Granger, Loeb Classical Library 251 (Cambridge, MA: Harvard University Press, 1931), 3.3.13.

68. Leon Battista Alberti, *On Painting*, trans. by Rocco Sinisgalli (1435; repr. Cambridge: Cambridge University Press, 2011), I.19 (p. 39).

69. Gottfried Semper, *The Four Elements of Architecture and Other Writings*, trans. By Harry Mallgrave and Wolfgang Hermann (Cambridge: Cambridge University Press, 2010), pp. 102–04.

70. Gottfried Semper, *Style in the Technical and Tectonic Arts; or, Practical Aesthetics*, trans. by Harry Mallgrave and Michael Robinson (Los Angeles, CA: Getty Publications, 2004), pp. 248–9.

Author's biography

Lars Spuybroek is Professor of Architecture at the Georgia Institute of Technology in Atlanta where he teaches design methodology and architecture theory. As an architect he built the *HtwoOexpo* water pavilion (1997), the *Maison Folie* (2004) in Lille, France, and large electronic public artworks such as the *D-tower* and *Son-O-House* in the Netherlands. His works have been exhibited at various Venice Biennales, the Victoria & Albert Museum, and the Centre Pompidou, and are part of the collections of the FRAC in Orléans and the CCA in Montreal. Since 2010 Spuybroek has turned his focus to writing and teaching. He is the author of a*The Architecture of Continuity* (2008); *Textile Tectonics* (2011); *The Sympathy of Things* (2011 and 2016); and *Grace and Gravity* (2020).

Author's affiliation

Lars Spuybroek, Georgia Institute of Technology, Atlanta, United States.

Author's address

Lars Spuybroek
lars.spuybroek@design.gatech.edu