# das sich entscheidet

thoughts on the apparatus and flesh Timon Bohn

"As surface, skin was once the beginning of the world and simultaneously the boundary of the self.
But now stretched, pierced and penetrated by technology, the skin is no longer the smooth and sensuous surface of a site or a screen.
Skin no longer signifies closure."

\_Stelarc

skin /skm/ noun the natural outer layer that covers a person \_Cambridge Dictionary

flesh /flef/ noun
the flesh is not matter, is not mind, is not substance.
\_Merleau-Ponty

touch /tʌʧ/ verb
to be so close together that there is no space between; to be in
contact
\_Cambridge Dictionary

apparatus /ˌæp.əˈrer.təs/ noun a set of equipment or tools or a machine that is used for a particular purpose Cambridge Dictionary

trace /tress/ noun
a sign that something has happened or existed
\_Cambridge Dictionary

Storage /'storage / noun
the putting and keeping of things in a special place for use in the
future
\_Cambridge Dictionary

memory /ˈmɛməri/ noun the ability to remember things \_Cambridge Dictionary Originally established by Arnold van Gennep and later adapted by the anthropologist Victor Turner, "[I]iminality as a sociologically useful concept denotes the middle phase of any ritual process [...] During the middle phase of such a process the individuals involved are understood to be 'no longer' and simultaneously also 'not yet' [...] It is thus an ambiguous phase; liminal personae are "neither here nor there; they are betwixt and between the positions assigned and arrayed by law, custom, convention, and ceremonial" (Wels et al.).

The middle phase in between events – neither here nor there. For the anthropologists the liminal manifested itself in transitions or transformations and was therefore a concept attached to the dimension of time. Liminality became a term to describe the in-between-moment during transitional life-events, ("a middle state") or as they called it "rites of passage". From a media theoretical perspective this passage, or encounter becomes interesting, as it contains a definition for the medium itself. The mediation of a contact or encounter is per se the crossing of a threshold, a certain kind of movement, transgressing time or space or both as a carrier (physically or immaterial) moving within a diffuse borderland (Wright).

"When thinking about the purpose of a medium, i.e., what it is supposed to achieve through its "middle ground between materials and the things people do with them," liminality is its quality" (Wright).

If there were no in-between there wouldn't be any medium. It is the necessity for transgression, exchange or contact, which both diffuses and connects the self with the world. The self, therefore in a way is always in a liminal state in need of mediation. "Skin is not merely denotative of the physical body as a space where changes and exchanges take place; rather, it acquires the valence of a metaphor, evoking a variety of other sites of liminality, [...] thus participating in rites of passage as one of the "areas of active mediation""

Ana-Karina Schneider

Skin in itself is a liminal entity – an entity that is "no longer and simultaneously a not yet" (Wels et al.). By surrounding the body it both covers the inside from the outside and vice-versa, whereby it is neither nor. It is a bodily manifestation of the in-between. Due to this threshold, skin is both tangible and impalpable. It is semi-permeable and therefore it allows certain outer conditions to enter the body, while blocking others. It is susceptible to touch from the outside and carries inner conditions to the outside. It senses and regulates temperature. Ironically, although it often refers to the boundary of our body, it is vague where this boundary begins and ends in the first place, pulling skin into an endless feedback loop of beginning and ending.

"Relatedly, skin participates in the unsettling experience of oneself and one's existence as plural, fragmented, and dislocated. Skin is the boundary that preserves the illusion of coherence, of the structured, integrated self; it circumscribes and safeguards our elusive sense of self" (Schneider, 214).

Skin enables the body, yet it complicates it. It is not a mere contour, it is also used as a social medium and as such it was made a carrier of oppressive pasts and today's violent injustices. It is exercised as a marker for exclusion, a key for access, it separates privilege. In his essay "The Fact of Blackness" Franz Fanon describes the violence inherent to the White Gaze:

"The black man among his own in the twentieth century does not know at what moment his inferiority comes into being through the other. [...] And then the occasion arose when I had to meet the white man's eyes. An unfamiliar weight burdened me. The real world challenged my claims. In the white world the man of color encounters difficulties in the development of his bodily schema" (Fanon, 258). Fanon ends his essay with the painful experience of not being seen as a man, but as a genus:

"I am overdetermined from without. I am the slave not of the idea that others have of me but of my own appearance. I move slowly in the world, accustomed now to seek no longer for upheaval. I progress by crawling. And already I am being dissected under white eyes, the only real eyes. I am fixed. Having adjusted their microtomes, they objectively cut away slices of my reality. I am laid bare" (Fanon, 260-261).

As Fanon's depiction shows, there is no one voice to speak about the one body. Eurocentric perspectives of philosophy have long ignored realities other than their own. Marginalized bodies are still underrepresented in discourses and only slowly is this bias is faced with a new multiplicity of voices (i.e. post-colonial, indigenous and feminist voices) speaking out against hierarchies of the body.

"The human body is never singular or stable. On the contrary, it is defined by diversity, fluidity, and transformation. Yet this diversity is continuously subjected to multiple cultural disciplines that attempt to normalize bodies into stable codes of gender, sexuality, ethnicity, nationality, globality, prosperity, subservience, and speed – even to establish certain bodies as invisible or disposable, or simply not human" (Colmina & Wigley, 220).

As described above the reality of the world with all its violent distinctions separates lived experiences of skin. Yet, there are common experiences of our liminal boundary which is worth being explored. A species capable of abstraction, invention, traveling and communicating through fiction, we constantly cross this threshold, extending our skin. We do this through extending our body and mind to the social body and to the world (physical and fictional worlds), making ourselves porous.

"Before design, there is never a clear line between the inside and outside of the human body, the end of one body and the beginning of another. Our inside is made of the outside that continuously

passes through it. We are literally made of what we eat, breathe, absorb, digest, and synthesize. Each body is a porous system, all flow and exchange with three million of its cells being replaced each minute. Every breath, meal, and touch involves the unimaginably complex exchange of organisms and genetic material that triggers chains of chemical reactions and electrical signals. Our seemingly distinct form is like a mirage, a relatively slow-moving effect of countless exchanges" (Colomina & Wigley, 222).

"The emergence of the human through the continuous invention of artifacts involves an uncanny mirroring. The human becomes human in seeing itself in the things it makes, or seeing its possibility in those things. So the human doesn't simply invent tools. Tools invent the human. More precisely, tool and human produce each other. The artifacts that prosthetically expand thought and reach are what make the human human."

Beatriz Colomina & Mark Wigley

We expand our realities with prosthetics and at the same time our realities create the need for this expansion. Plastic surgery i.e. has its roots in the reconstruction of faces after the World Wars of the 20th century.

"Prosthetics have an uncanny quality as they allow the human to feel human, yet don't seem to need the body, or have surrogate parts of the body attached to them. Even more strangely, there is something human about them even before they are attached. The body is dramatically transformed, but the added element is fully integrated into the sense of self" (Colomina & Wigley, 226).

Prostheses are commonly described as extensions to the human body. But as Bernard Stiegler observed, "the prosthesis [...] is the constitution of this body qua 'human'" (Colomina & Wigley, 51-52). The extensions we invent and add to our reality through our observations, our creative expressions, our urge to solve puzzles, riddles and problems, reflect back on us/signal back, shape us - they (re-)create who we are. All species inhabiting the planet shape their environment and are simultaneously shaped by their environment through adaptation and therefore all species live in interdependence. This reciprocal feedback loop of evolving organisms and environments "finds its echo within the human species and is accelerated through the technological extensions that are an intimate part of its biology" (Colomina & Wigley, 56). Humans therefore (re-)create themselves through incremental adaptations. extensions, through a continuous dialogue with artifacts, through design and technology. This interdependency overcomes the threshold of the self. The liminal space is being conquered by an experience of reciprocity.

"The invention of artifacts that reinvent the inventor is precisely not controlled by the human in the sense of a singular animal imposing itself on the surrounding living world. The human is permanently suspended between being the cause and the effect, between designing living systems and being designed by them. What is human in the end is neither the designer nor the artifacts but their interdependency" (Colomina & Wigley, 56-57).

The careful design of the apparatus, both mechanically and digitally, reflects the human-machine interdependency pointed out by Colomina and Wigley. In the process of development, designer and apparatus shape each other. The assemblage of the machine becomes an intimate encounter between human and artifact - a humbling process of (co-)creation.

"The human is somehow suspended in a complex and continuous back and forth between itself and artifacts - a flickering that ultimately dissolves the distinction between them. Designed artifacts have as much agency as the animal that seemingly produced them and transform the animal just as much as they are transformed by the animal. To say it the other way around: the body and the brain are artifacts in their own right. What is human is precisely the radicality of this mutual exchange" (Colomina & Wigley).

Before the performance, in a manual process, I cautiously tare the distance between the needle attached to the z-axis on the apparatus and my forearm. This is to determine the maximum movement of the z-axis in accordance with the ideal depth for the needle to pierce my skin. Too deep, the needle tears a large wound into my arm causing scarring, too far, there is no contact. Thus, the preparation of the performance becomes a crucial but invisible part of the performance. Before its actual beginning it already addresses the interdependence between the apparatus and myself. The distance, the undefined space between the needle and my skin, extending and contracting, becomes the field of mutual exchange with the needle piercing through the threshold of the skin being the most radical moment in this negotiation of contact.

"I only really live outside of myself; outside of myself I think, meditate, know; outside of myself I receive what is given, enduringly; I invent outside of myself. Outside of myself, I exist, as does the world. Outside of my verbose flesh, I am on the side of the world" (Serres. 9).



distributed on three axes, the apparatus is capable of moving a tattoo machine through a 3D dimensional space.

## Tattoo machine

a rotary tattoo machine is attached to the z-axis. It carries a 1007RL cartridge needle.

# Stepper motors

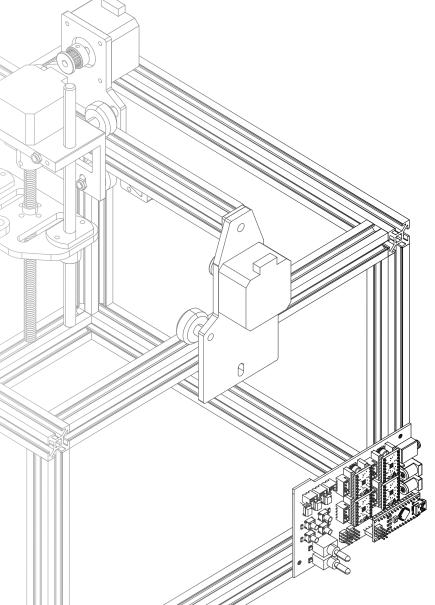
three Nema 17 stepper motors with a torque of 42Ncm are responsible for x- and y-directional movement. Another Nema 17 stepper motor with a torque of 26Ncm is in charge of moving the x-axis.

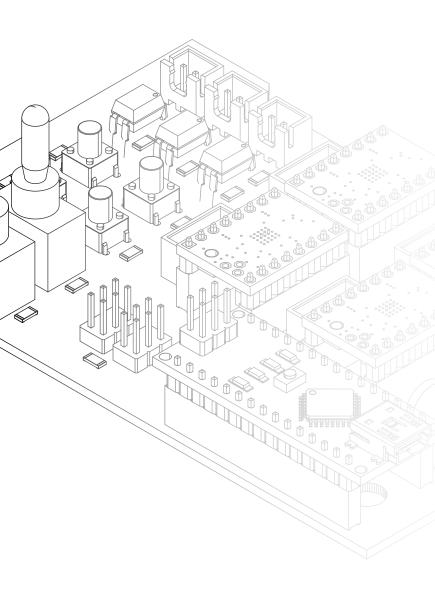
### Three axes

both x- and y-axis move through v-type wheels on a 20x20 b-type nut 6 aluminum profile. The z-axis is guided on a trapezoid thread supported by two linear shafts.

# **Endstops**

three endstops ensure the homing of all 3 axes.







the control unit is a custom manufactured PCB for operating and controlling the apparatus. It combines different components to interface with both a computer and the tattoo/cnc machine.

### Arduino Nano

the Arduino Nano microcontroller acts as the centerpiece of the PCB. It interfaces with the computer through the grbl firmware and is among other things responsible for translating gcode into physical movement.

# Stepper Drivers

four TMC2208/TMC2209 silent stepper drivers operate all 3-axes.

# Optocouplers

three built-in LTV-817 optocouplers ensure noisefree axis limiting.

# Emergency stop

two toggle switches are responsible for an emergency stop. When turned off, they keep any voltage from flowing into the pcb.

### Control buttons

four push buttons in the lower left corner are interface elements for resetting the MCU and holding, resumeing or aborting the operation.

# 3.5mm audio jack

a 3.5mm audio jack is interfaces with the tattoo machine.

# Barrel jacks

two barrel jacks serve as interfaces for both a 12V and 5V power supply.

### JST XH and Pinheader

two different connector types for interfacing with pcb.

"The world seen is not "in" my body, and my body is not "in" the visible world ultimately: as flesh applied to a flesh, the world neither surrounds it nor is surrounded by it. [...] The superficial pellicle of the visible is only for my vision and for my body. But the depth beneath this surface contains my body and hence contains my vision. [...] There is reciprocal insertion and intertwining of one in the other."

\_Maurice Merleau-Ponty

body, flesh and skin as an interface between the self and the world For Merleau-Ponty the relation between body and things is chiastic. How the body perceives its surroundings is inevitably intertwined with the world itself. He uses the term "flesh" as a concept that encompasses both the body, and the outer world: "a kinship between the sensing body and sensed things that makes their communication possible" ("Maurice Merleau-Ponty").

Merleau-Ponty writes: "the idea of chiasm, that is: every relation with being is simultaneously a taking and a being taken, the hold is held, it is inscribed and inscribed in the same being that it takes hold of" (Merleau-Ponty, 266).

Due to the relationship between body and world, the distinction between subject and object becomes blurred. It is that the subjectivity of sensing can be noticed in the sensible; the sensible itself becomes therefore subjective (Zambon, 137).

Merleau-Ponty comprehends "a relation between self and other, in which the other is always entwined in the self, although the two are neither identical nor confused" (Hustvedt, 307-308). This open kind of subjectivity stands in drastic contrast with the masculine subject of the enlightenment observing the world from a secure distance. Subjectivity therefore is always exposed to the world and thus much more fragile:

"Diese Verwundbarkeit, diese Nacktheit lässt sich auf der Haut spüren, auf der Schwelle zwischen innen und außen. Haut ist kein bloßes Tast- und Taktorgan, sondern fragile Trennlinie und zugleich Schwelle des Ich zur Welt: Haut ist der Kontaktort, "wo das 'ich' sich entscheidet"" (Zambon, 138-139).

Skin in this angle becomes the porous surface of contact. As the last barrier between inner and outer world, it is directly held out into the world and simultaneously it can be conceptualized as the carrier surface for all the other senses, since their organs are localized

engulfments of it (Serres, 3).

"Serres finds the soul above all on or in the skin, because the skin is where soul and world commingle. The skin is the mutable milieu of 'the changing, shimmering, fleeting soul, the blazing, striated, tinted, streaked, striped, many-coloured, mottled, cloudy, star studded, bedizened, variegated, torrential, swirling soul" (Serres, 5).

"Touching— touching oneself seeing seeing oneself the body, the flesh as Self"

\_Maurice Merleau-Ponty

the intimacy of being touched (by a machine)

Touch is ambiguous: it is active and passive at the same time. By touching both your hands simultaneously, Merleau-Ponty explains, both hands can oscillate between the states of touching and being touched. He states, "when I press my two hands together, it is not a matter of two sensations felt together as one perceives two objects placed side by side, but of an ambiguous arrangement [...]. Touchable things in the world constitute our touching bodies as much as our touch reveals them" (Hermans).

The touch in Merleau-Ponty's thought forms a chiasm: the point or moment in which subject and object intersect. While the strict logic of a chiasm is its invertibility, Merleau-Ponty states that the inversion of the touching into the touched is never actually realized, rather it is always immanent. They never interchange, but constantly approach each other (Zambon, 138).

In his writings on the senses philosopher Etienne Bonnot de Condillac identifies the sense of touch as the one fundamental sense, which constitutes a sense of self:

"It is only with the coming of the sense of touch, 'the only sense that can by itself judge of exterior objects', that the statue will be able to grasp that there is an exterior world from which these sensations emanate and therefore that it is an 'I', distinct from this exterior world, and receiving those sensations" (Condillac in Serres, 4).

The moment in which my skin and the needle intersect, the skin manifests as a passive and active part, at the same time shifting between getting touched or penetrated by the apparatus and in return touching the needle, thus touching the apparatus. This interplay leads to the entanglement of me and the apparatus during the performance.

"Serres's claim is that the soul does not reside in one particular location in the body - the pea-sized pineal gland, according to

Descartes, buried deep in the brain, but flares wherever and whenever the body touches upon itself" (Serres, 4).

The moment the needle approaches my skin just enough to almost touch, a certain intimate moment is shared with the audience. Vulnerability, the opening of the porous epidermis to the needle, the apparatus, the touch as vice-versa reveals what in Merleau-Ponty's conceptuality could be described as the act, in which the world opens.

Not only do we live in the world. We are exposed to the world at every moment. Not only is our gaze directed at the world, an inside aiming at an outside – the world's gaze is on us, or as Zambon (137) phrased it: the world recognizes itself through myself. A chiasm, an entangled relationship.

"On this spot, the intense meditation culminates in an apex, in the blinding apparition of the singular brought about by the saturation of presence, the transfiguration of the many-hued tattoo into a pure soul. The I is rarely revealed outside of these circumstances. I am, I exist in this mixed contingency that changes again and again through the agency of the storm that is the other, through the possibility of his or her existence. We throw each other off balance, we are at risk" (Serres, 29).

The touch, materialized in a dot or a fine line binds apparatus and body in the liquid of the ink. The reflection of human thought in the apparatus and its own agency in movement, in the sharp but precise vibration of the tinctured needle leave their imprint and become flesh.

"To be sure, seen and visible tattoos, imprinted with a hot needle, have their origin in this gaudy thing that is the soul, a complex labyrinth of sense striving alternately towards the internal and external, and vibrating at the limits of each. But I have drawn, coloured or

painted tattoos only in order to reveal the tangible: an abstract picture of the sense of touch. Abstract insofar as it abandons the visible in order to rejoin the tactile. [...] The map on the epidermis most certainly expresses more than just touch, it plunges deeply into the internal sense, but it begins with the sense of touch. [...] In the lavish luxury of tactile sensation, I feel as though I am touching a new abstract, at least on two sides, one of mixture and coloured patterns, and the other being one where the geometer abandons his measuring-stick to assess individual shapes, ridges and corridors" (Serres, 25-26).

"Skin on skin becomes conscious, as does skin on mucus membrane and mucus membrane on itself. Without this folding, without the contact of the self on itself, there would truly be no internal sense, no body properly speaking, coenesthesia even less so, no real image of the body; we would live without consciousness; slippery smooth and on the point of fading away. Klein bottles are a model of identity. We are the bearers of skewed, not quite flat, unreplicated surfaces, deserts over which consciousness passes fleetingly, leaving no memory. Consciousness belongs to those singular moments when the body is tangential to itself."

\_Michel Serres

Our largest organ is a threshold, communicator, a regulator and a storage of events and memories. It holds childhood scars, summers spent, lovers' names. In Christopher Nolan's film "Memento" the protagonist suffers from amnesia. His only memory is his wife. He is driven by revenge, trying to find his wife's rapist and murderer. Unable to store recent memories, he uses notes, polaroids and tattoos as tools to store thoughts, ideas, information and knowledge. His skin becomes his guideline, the only surface he can fully trust. "These days I trust this memory more than data banks. An author speaks for himself. I write on my skin and not on that of others who would answer for me" (Serres, 76).

Observation, information, parts of the puzzle he tries to solve, go under his skin, because it is the only place they are safe. Safe from others and safe from erasure. They are precious, a metaphor for life and death at the same time. A manifestation of the liminal.

"Those who need to see in order to know or believe, draw and paint and fix the lake of changing, ocellated skin and make the purely tactile visible by means of colours and shapes. But every epidermis would require a different tattoo; it would have to evolve with time: each face requires an original tactile mask. Historiated skin carries and displays a particular history. It is visible: wear and tear, scars from wounds, calluses, wrinkles and furrows of former hopes, blotches, pimples, eczema, psoriasis, birth-marks. Memory is inscribed there, why look elsewhere for it?" (Serres, 24).

To store information means to preserve content for future access or use. Storage can be materialized in all kinds of forms and shapes such as physical spaces, specific storage media or memories. But no media can escape its own materiality:

"W.J.T. Mitchell described images as being "matter, in the sense that they are always embodied in material objects, in things, whether stone, or metal, or canvas, or celluloid, or in the labyrinth of the lived body and its memories, fantasies, and experiences." [5] By this understanding there can never be an image that is not stored (Mitchell in Falk-Finley, Falk-Finley).

The practice of storing images is as old as the human species itself and the tattoo is one of the oldest image practices (Scheller, 28). There is no one clear emergence of tattooing, rather several cultures across the globe have independently started to inscribe images into skin.

In my performance my skin serves as storage. Through an inked and fast moving needle, ink is being injected under my skin. Information of location, movement and depth of the needle are saved under my skin. Thus, the moment of contact between the apparatus and myself, the moment of touch is irreversibly inscribed into my skin. It is stored.

During the process of inscription, the skin is damaged and then undergoes a process of regeneration and renewal which represents a liminal moment between the old and new. It marks the moment between injury and healing. Just shortly after the writing process my body will have an "immune response and white blood cells arrive to clear the debris. During this process, some of the ink particles are removed from the body via the lymphatic system, while the remainder are engulfed in fibroblast cells and sealed below the surface of the skin" (Weston).

"The skin receives the deposit of our memories and stocks the experiences printed on it. It is the bank of our impressions and the geodesic panorama of our frailties. We do not have to look far, or search our memory: the skin is engraved and imprinted to the same extent as the surface of the brain, and perhaps in the same way" (Serres, 75).

Every type of storage media comes with specific requirements of

reading and a different durability:

"The concept of storage is further complicated when the degradation of the means of storage affects the content. A film reel naturally deteriorates every time it is viewed — the celluloid gradually loses some of its color, becomes scratched, and accumulates dust. This means that each time a film is viewed it is slightly different, even though it is viewed from the same physical item" (Falk-Finley).

Just as media storage decays over time by being read or by the fact that its physical components naturally degrade, the stored information on my skin will too. Due to its constant exposure to outside influences (i.e. sunlight, friction, etc.) and the skin's natural aging process the tattoo fades over time: "the dispersal of the ink particles occurs over time as the cells which contain them either divide, or die and exit the body" (Weston).

"The soul inhabits a quasi-point where the I is determined."

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