

# The Plasticity Of Flesh And Bone: Transforming The Body Through Somaesthetic Experience

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**Abstract:** *This paper explores how the human mechanisms of gene expression may be used in novel artistic practices which use the human body as material. Examining historical examples of artists who use the body as material along with popular culture body modification practices, epigenetic transformations are put forward as a method to be explored in new forms of artistic practice. Examples of speculative fiction, works of architecture and psychotherapeutic devices are investigated towards outlining a direction for such a practice.*

**Keywords:** *architecture, genes, Orlan, Reich, Ballard, Crash, Stelarc.*

## 1. Transformative Capacities

Considering the continuing, ongoing nature of our species' evolution, any notion that our way of being or form of existence is static must be refuted. The ever-changing formation of being is carried out through adaptations. The adaptations we understand best are those that are naturally selected over generations through reproduction. But what of the changes that occur within a lifetime, or in the fleeting transience of a single event? Changes are constantly occurring towards transformations. Whether they result in improved fitness or whether they are mutations that will not be carried forwards into subsequent generations cannot be predetermined.

Accompanying our evolutionary process is a prevalent desire for physical transformations, to change our flesh and bones into something else. Such desire may be to improve in terms of popular aesthetics or criteria of beauty, or for fitness, or to develop new abilities and capacities. Some transformations occur through intentional and planned techniques, such as the physical transformations realized through cosmetic surgery. Other transformations come about in a makeshift way, taking advantage of an existing potential that one has come upon by chance encounter and carrying this potential forward into actuality. One example of a situation in which this emerges is the physical, somatic experience between body and a constructed enclosure. This essay explores architecture, cars, and Wilhelm Reich's "Orgone Accumulator" for their capacities to transform the human body, and raises questions about the sexual dimension present in a somaesthetic engagement with surroundings.

Using the body and its transformative capacity in artistic practice as well as in popular cultural aesthetics has focused greatly on using medical interventions that make physical changes to flesh and bone. This pliable material is used not only as a medium of expression, but as able to express an idea of potential through its materiality. The aesthetics of bodybuilding, for example, offer a cultural phenomenon where the mass, shape and texture of human flesh are critically measured on stage, and the practice of this culture requires ongoing transformations of this material. A counterpart to this are the unique aesthetics evidenced by those addicted to cosmetic surgery. Whereas bodybuilders and cosmetic surgery patients ostensibly seek to achieve an existing aesthetic criterion, performance-bioartists have made physical changes to their bodies to question aesthetics. The artists Stelarc and ORLAN have both experimented with surgical interventions in part to pose questions about cultural phenomena behind such desires for transformation, as well as to propose functional augmentations of the body towards realizing a new human form of existence through extended capacities.

To continue the development of these creative practices, a consideration of our adaptive mechanisms, in particular the mechanisms of gene expression known as epigenetics, may reveal existing potentials for bodily transformation that have not yet been taken advantage of. Such potentials for transformation can be found in somatic material encounters between the body and a built enclosure. Part of such somatic encounters is a sexual dimension not often discussed, and it may be this that allows for a transformation to be more readily adapted. Material fetishes and material encounters are found in works of art and literature that hint at such potential for transformation.

## 2. The Plasticity of Flesh and Bone

Bioartists have made artworks through the genetic transformations of living organisms, from rabbits and rats to butterflies.<sup>1</sup> Cybernetics have also been used to enhance human capacities for movement and sensation.<sup>2</sup> Others have sought to transform their own flesh and bone through artistic practices. Among these artists, Stelarc and ORLAN offer examples of attempts to propose and actualize possibilities for the human body through the physical transformation of their bodies. These transformations of their own bodies, however, operate within a form of creative practice that reserves the transformation for the artists, positioning themselves as objects in relation to spectators of their performances. To offer the potential of transformation beyond metaphor and symbol, alternative forms of practice should be explored.

Stelarc's "Extra Ear" (1999) and "Ear on Arm" (2007) projects aimed to grow a copy of one of his ears with his own skin cells, and have it surgically transplanted onto his body. This ear would include a microphone that would allow the public to listen online to what the ear hears. Although the project has thus far not achieved all of its goals, he is continuing the process. This project, among others Stelarc has made, seeks to increase his body's sensory capacities through a functional addition, an action that aims to be more than aesthetic. Stelarc ("Obsolete Bodies," n.d.) has stated that "It might be the height of technological folly to consider the body obsolete in form and function, yet it might be the height of human realizations. For it is only when the

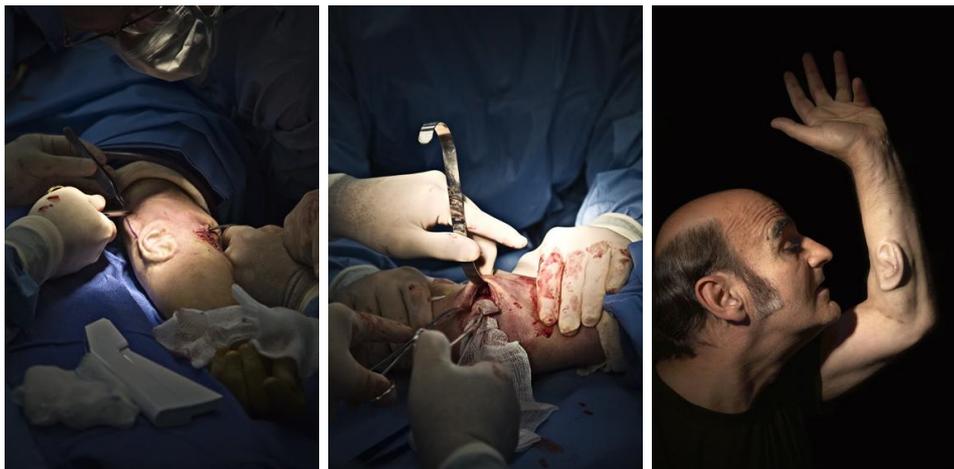
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1 Eduardo Kac's project "GFP Bunny" (2000) involved the display of a rabbit that had been genetically modified (by Louis-Marie Houdebine) with the green fluorescent protein of the jellyfish so that it would fluoresce when exposed to blue light; Kathy Height's project "Embracing Animal" (2004-2006) genetically modified rats with human DNA and built special housing for them for public viewing; Marta de Menezes's project "Nature?" involved the genetic modification of butterfly wings to create a new wing pattern not seen before.

2 Neil Harbisson's artistic practice derives from his use of a cybernetic implant that allows him to hear color, extending his senses as he is otherwise color-blind. <https://www.cyborgarts.com/>

body becomes aware of its present position that it can map its post-evolutionary strategies.” His attempts to transform the body through biomedical and industrial technologies aims to address what he finds lacking in the human organism as well as realize potentials for new forms of being. He writes (“Redesigning the Body”, n.d.), “having confronted its image of obsolescence, the body is traumatized to split from the realm of subjectivity and consider the necessity of re-examining and possibly redesigning its very structure. ALTERING THE ARCHITECTURE OF THE BODY RESULTS IN ADJUSTING AND EXTENDING ITS AWARENESS OF THE WORLD.”

From 1990 through 1993, ORLAN made an iterative artwork in the form of a series of cosmetic surgery performances titled “The Reincarnation of Saint ORLAN.” Her position on the topic of the body as a material for art is clarified in her “Carnal Art Manifesto” (n.d.), where she states, “Carnal Art is not interested in the plastic-surgery result, but in the process of surgery, the spectacle and discourse of the modified body which has become the place of a public debate.” Through this iterative work, she sought to transform herself into a female ideal of beauty as depicted by male artists, seeking to gain the facial features of idols of female beauty in historical paintings (Mona Lisa, Venus, Psyche, Europa, among others). This embracing of the possibility for physical transformation of her flesh and bone was to counter her DNA, her innate biology, as she states, “my work is a struggle against the innate, the inexorable, the programmed, Nature, DNA (which is our direct rival as far as artists of representation are concerned), and God!” (Jeffreys, 2006).



**Figure 1:** Stelarc (2007- ongoing) *Ear on arm*. Performance/photography artwork.

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Both Stelarc and ORLAN evidence artistic practices that manifest physical transformations of the body, but it is particularly their (respective) bodies. Their work focuses on sensation, what is experienced through the transformation and post-transformation, but they leave no experience of sensation for us observers or spectators. We can imagine and sympathize but not sense, taking the images and videos they create as inspiration for our own potential transformations but not take part in the transformative process ourselves. In this respect their practices offer conceptual propositions and symbols of transformation that we may abstract into our own lives rather than effecting any sensation of transformation in us. As Stelarc (“Phantom Body,” n.d.) has stated, “The body now performs best as its image.” Although they (especially ORLAN) present a critique of prevailing aesthetics of the body, their work depends on body

as image, as object, and the critique they offer cannot be carried out without this focus. Body as process, as a continuing evolution that we can affect and possibly direct, requires a different perspective as well as a different form of practice.

Popular culture examples of related practices, such as the aforementioned bodybuilding or cosmetic surgery, offer us possibilities more readily accessible. Individuals (non-artists) such as Rodrigo Alves or Dennis Avner (a.k.a. Stalking Cat) may offer even more extreme versions of the potentials cosmetic surgery can offer than either Stelarc or ORLAN do. Whereas most individuals who attempt these transformations through cosmetic surgery do so through private medical systems, some attempt to perform surgery on themselves (Veale, 2000, p. 221). These DIY surgeries illustrate the overwhelming desire for self-transformation through practices of self-mutilation where aesthetics and neurosis converge. Similarly, online bodybuilding forums offer information on where to purchase steroids and cosmetic injections as well as protocols on how to use them. In recent years this practice of chemical transformation has become more acceptable, and these chemicals easier to find. Current practices range from injecting androgens and growth hormones to silicone oils and Bioplasty (derma fillers).<sup>3</sup> In these actions, flesh and bone grow and mutate while integrating with non-living materials. Aside from aesthetic transformations, the practice of ‘trepanation’ has been carried out by some individuals on their own bodies in search of increased mental capacity and psychological health.<sup>4</sup> Once a futuristic or controversial topic, even full sex reassignment surgeries have entered into public discourse. Our bodies, taken as image or objects, are now understood as more plastic in the sculptural sense, capable of being modified or shaped into new forms. The prevalence of this desire for the extremes of body image, and the normalization of both this desire for transformation and the practices through which it is carried out, has changed how such body art is perceived. Furthermore, the normalization of physical changes to the body has led to greater sensations of transformation, with bodies becoming dramatically different, that what is required from critical artistic practices is more than symbolism and image. If we are able to undergo our own surgical and chemical transformations, and to experience the changes that arise in our physiology and psychology, the affective value of symbolic propositions begins to wane.

Rather than a focus on body image, artistic practices might aim to transform one’s body schema, with the former being what others see and the latter being what one feels as a body sensorially or in regards to affect.<sup>5</sup> This parallels what has been lacking in body art practices, in their focus on the image and object of the body as symbol in an alienating ritual of object-subject spectatorship. The experience of transformation, one that is beyond cosmetic but somehow a transformation of being, may be what is desired. This begs the question of whether artistic practices could manifest this change, engendering an affective transformation not through the transformations of flesh and bone but through another medium.

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3 A key distinction between these popular and artistic practices is that whereas Stelarc and ORLAN make their processes and practices visible to participate in a critical public discourse, these popular culture examples mostly aim to keep their transformations secret, to achieve transformations that would be accepted as natural rather than artificial.

4 20<sup>th</sup> century examples: Amanda Feilding, Bart Huges, Joseph Mellen. See also: *Trepanation: History, Discovery, Theory*. Robert Arnott, Stanley Finger, C.U.M. Smith. Lisse: Swets & Zeitlinger, 2003.

5 Shaun Gallagher (2005, pp. 37-38) offers a literature review on the difference between ‘body image’ and ‘body schema.’ He puts forward the distinction as follows: “body image [is] a (sometimes conscious) system of perceptions, attitudes, beliefs, and dispositions pertaining to one’s own body [...] Body schema, in contrast, is a system of sensory-motor processes that constantly regulate posture and movement—processes that function without reflective awareness or the necessity of perceptual monitoring [...] The body image normally involves a personal-level experience of the body that involves a sense of ownership for the body. The body schema, however, functions beneath the level of personal life [...] The body image involves an abstract and partial representation of the body in so far as one’s perception, thought, and emotional evaluation can attend to only one part or area or aspect of the body at a time.”

### 3. Phenotype as Artistic Medium

Beyond these cosmetic or skin-deep transformations, poet and architect Robert Kocik proposes that we take our human mechanisms of gene expression—epigenetics—as a novel artistic medium. The epigenome is understood to be affected by both physical and chemical environmental stressors and diet, affecting which genes are expressed. The epigenome is involved in regulating gene expression. Whereas genotype is the set of genes in our DNA responsible for a trait, phenotype is the physical expression of that trait (through RNA as it converts the genetic information so it can be used to build proteins). The genome does not change in an individual, but the epigenome can be altered by environmental conditions. Aspects present in our DNA can remain latent until particular environmental factors trigger their expression. It is accepted that environmental conditions can affect the expression of genes, particularly with environmental toxins. Yet other aspects of our somatic interaction with our architectural surroundings could still be explored towards effecting transformations. Our individual genetics may be fixed, but within that genotype exist potentials for gene expression we may not be aware of. Whereas ORLAN's above statement that DNA is the enemy of the representational artist, non-representational creative practices may find ways to explore this genetic potential.

In looking at this potential, Kocik (2014, p. 124) has proposed that we use phenotype as an artistic medium towards transformations that are either required for our continuation, or that may be beneficial for reasons of our own determination. He writes, "Phenotype is a particularly viable artistic medium. If it is not—if phenotype is not taken up as a particularly viable artistic medium and made true as such—how will we ever stay alive?"

Basing his design strategy on the science of epigenetics, Kocik proposes what he calls "evoked epigenetic architecture," a designed surrounding that has the possibility to transform an organism at an epigenetic level by regulating the expression of genes through determining environmental conditions. He writes (p. 103), "An epigenetic building places selective pressure directly upon our impending persons." To enclose the body with a built surrounding that would evoke epigenetic gene expressions—thus leading to transformations of the body—would be a way of making phenotype an artistic medium. This form of transforming the body would be markedly different from what artists have done in the past; rather than changing their own bodies through surgery or chemical intervention, the artist would create the possibility for anyone to venture into this enclosure and be transformed. This would be a doubled creative act; first the creation of the built surroundings or enclosure, and second the body's epigenetic expression in response to the surrounding. Not all bodies will respond in the same way, as a confluence of specific latent genes, environmental conditions, and timing are required.<sup>6</sup> But in that moment of perfect confluent accord, the body creatively takes up this potential through a gene expression. Kocik writes (p. 124), "So, why not architecture (as active epigenetic agent): the built environment intersecting, interrupting transfer of genetic material from DNA to RNA? As possible biotopological practices how about: Architectural Licking." Could we develop forms of artistic practice that employs somatic experience towards the evocation of epigenetic change? Such a development might allow for epigenetic expressions, and thereby effect transformations of the bodies of those who engage with the artworks rather than transformations symbolically represented in the individual bodies of the artists.

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<sup>6</sup> Madeline Gins and Arakawa's artistic and architectural practice presents a similar ethos, aiming to build an architecture against death. Their "architectural body" project proposes the potential of architectural design to transform a body, although they do not directly discuss epigenetics. More: <http://www.reversibledestiny.org/>

This idea of licking references an important early study into epigenetics. In a study on the nurturing behaviors of rats, a direct connection between behavior, somatic engagement and gene expression was illustrated. The study showed that rat pups who were licked by their mothers grew up to be happy and calm adult rats that were able to react calmly to stress, whereas rat pups not licked by their mothers became anxious and prone to disease (Weaver et al., 2006). In this case, a somatic and social experience of connection between pup and mother effected a clear transformation. The nurturing behavior of licking led to an epigenetic gene expression, and this led to significant differences in adult rats. This may correlate with human childhood experiences as recent studies have indicated that trauma suffered during childhood can lead to changes in brain development (Bearer & Mulligan, 2018).

#### 4. Remedial Enclosures

In exploring the limits of what transformations can be expected through our engagement with designed surroundings, Wilhelm Reich's 'orgone accumulator' and the commissioned house designs of Richard Neutra present examples of built enclosures designed to transform a person that predate our contemporary understanding of epigenetics. Seeking to address both psychological and physiological ailments, both Neutra and Reich created constructions as remedies, through a reduction of the intensity or frequency of these ailments. Rather than an epigenetic transformation through phenotype as artistic medium, they propose transformation through aesthetic pleasure in connection with the libido and evidence historical precedents for creative practices aimed at transforming the body.

Although there is no record of the two being in contact, uncanny parallels exist in the lives of these two designers. Wilhelm Reich (1897-1957) and Richard Neutra (1892-1970), were both born in Austria and died in America. They also shared an interest in Freud's psychoanalytic thought. Apart from being a personal friend of Freud's son Ernst Ludwig, Neutra's connection to Freud was primarily through the concept of the libido. Neutra was interested in the relation between libido and aesthetic pleasure, and how this link offered new possibilities for architectural design. In her book *Form Follows Libido*, Sylvia Lavin (2007, p. 72) writes:

*The modernist building generally offered its form both as an object of aesthetic pleasure and as an instrument of good health. What Neutra added to this formulation was a definition of aesthetic pleasure as the source of healthful effects, and not just in general but in relation to psychological health in particular. Psychoanalysis was key to this development, because the libido offered the opportunity to link the pursuit of satisfaction and the very idea of pleasure to an environment conceived in relation to flows of energy.*

According to Lavin, Neutra's architectural designs were intended to offer a kind of therapeutic aesthetic experience. The energies that Freud describes in his definition of libido are similar to the energies that Neutra and other architects were designing their buildings around. Neutra was interested in 19<sup>th</sup> century philosophies that did not separate physiology from psychology, perhaps as psychology had yet to come into its own as a distinct field of medicine. This examination of the whole person was key to Neutra's designs, somewhat similar to Reich's perspective.

Based on Freud's theory of sublimation, meaning the transformation of repressed energy into a symptom, Neutra created his own model of energy transactions or transformations. He believed that there were energy transformations within a body, but that these could be brought

into the body from outside, from an external source. The body was a collection of energies that repeated and intensified the energy exchanges taking place elsewhere in the world. Lavin (2007, p. 70) writes, “the economy of his buildings was that, in purchasing a ‘Neutra,’ his clients acquired the promise of happiness delivered through the therapeutics of aesthetic pleasure.”



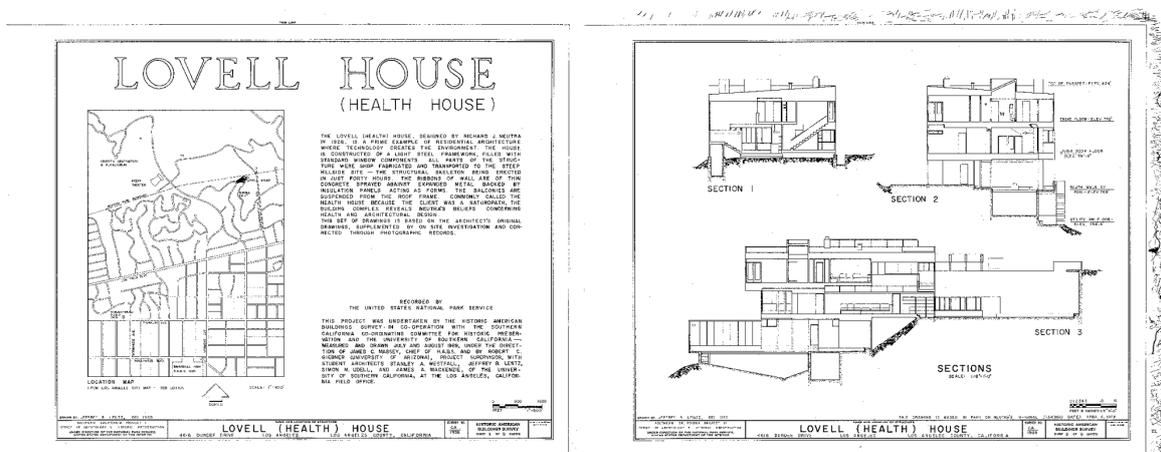
**Figures 2 and 3:** Richard Neutra (1929), Lovell (Health) House. Photo © User: LosAngeles / Wikimedia Commons. Permission for reprinting on Creative Commons license CC-BY-SA-3.0.

Examining his commissioned houses, Lavin describes how Neutra, when designing a home for a client, would conduct many hours of interviews with the client to outline their psychological neuroses. Based on this information, he would design a home that would counteract these neuroses, or act as a therapeutic element in treating them. The elements that he used to effect these therapies were based on his own aesthetic of modernist or international style architecture; large open spaces, large windows, mobile walls, reflecting pools, among others. Later in his career he began to include other elements essential to this idea of therapy, namely opening the house up to the exterior environment, creating natural air flow from outside to inside, and using natural materials such as stone and wood, and of course water in reflecting pools. The interior surfaces were reliefs built up from these materials rather than flattened into a single plane. It was these natural elements and material surfaces of the interior space of the house that were to create, according to Lavin, the therapeutic effects needed to treat his clients’ neuroses. The materials, the effect of using these varied natural materials, was to animate modernist abstract space with the currents of energy in the atmosphere.



**Figure 4:** Richard Neutra, (1932). VDL studio and residence (architect’s own studio and house). Photo © User:DavidHartwell / Wikimedia Commons. Permission for reprinting on Creative Commons license CC-BY-SA-4.0

Neutra's houses intimately connected the inhabitants to the materials and to the environment immediately surrounding the house. The house was permeable, as he saw that humans were permeable. These energies, for Neutra, flowed through all things, people, materials, environments. This holistic view also afforded him the philosophical potential to begin treating clients with his architectural designs. In connection with the libido, the aesthetic pleasure that was therapeutic had within it a sexual dimension. Lavin (2007, p. 70) writes, "the form psychology that conditioned Neutra's reception of psychoanalysis resounded with the quest for pleasure. This tradition presented the body as a registration device that through empathic exchange manifested the effect of an aesthetic object. The resonating vibration imagined between the properly perceiving subject and the properly shaped object was defined as sexually charged." It was this sexual dimension, acting on libidinal energies, that permitted a somaesthetic experience of Neutra's architectural surrounds to be therapeutic. The remedial transformations Neutra sought to effect in his residents would come about through this energetic engagement and interaction between body, material and form.



Figures 5 and 6: Richard Neutra, (1932). Lovell (Health) House. Architecture. Photo © User:DavidHartwell / Wikimedia Commons. Permission for reprinting on Creative Commons license CC-BY-SA-4.0

A psychologist rather than architect, as one of Freud's disciples Wilhelm Reich continued Freud's research into sexual dysfunction in searching for a biological basis for the metaphor of the libido (libido as energy, instincts, unconscious and part of the 'id'). The desires created by this libido, for example sexual expression, often do not fit with societal norms or expectations of behavior and must be controlled through what Freud called 'ego defenses.' Overuse of ego defenses leads to neuroses. So, for Freud, the sexual dysfunctions that result from neuroses are preventing the expression of libido and therefore of sexual desire. Reich turned this around, saying that it is rather the lack of the expression of these desires that leads to neuroses. This was controversial, as Reich was stating that the remedy for neuroses was to have a fulfilled sex life through unadulterated expression of one's sexuality.

Reich's identification of what is lacking in the organism, and the creation of a device to compensate or replace what is lacking (the 'orgone accumulator'), derives from his belief that life operated in a cycle of 'biological pulsation.' This came about through two opposing movements, one of contraction and one of expansion, which themselves came about, for contraction, through a combination of anxiety and sympathetic innervation, and for expansion, the combination of

pleasure and parasympathetic innervation.<sup>7</sup> This was the basis for a rhythm of life, a pulsation that operated across organisms (Reich, 1973, p. 4).

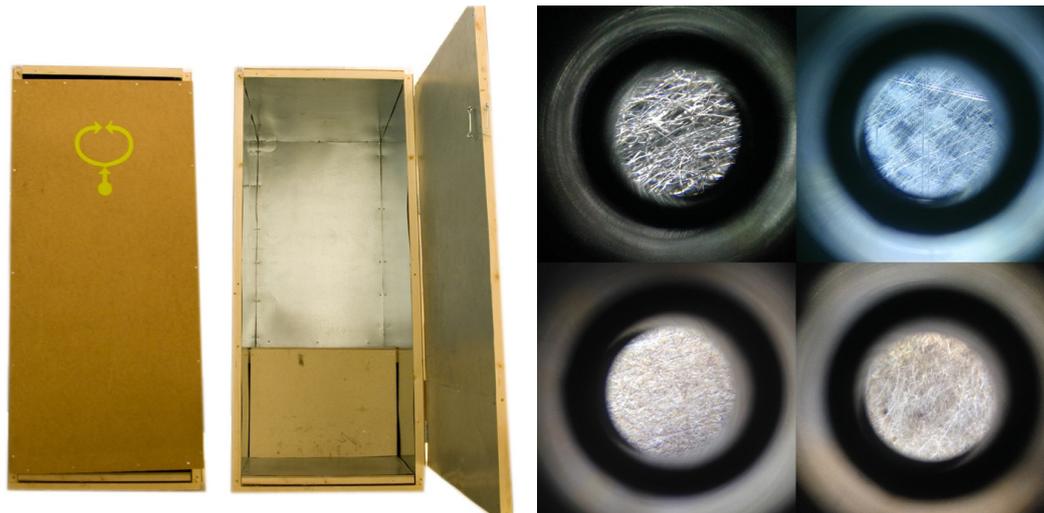
What is particularly interesting here is his extension of psychological experiences, anxiety and pleasure, in combination with parts of the autonomous nervous system (parasympathetic and sympathetic systems) towards a somatic experience. Reich (1960, p. 236) writes: “what we feel as pleasure is an expansion of our organism. In pleasure corresponding to vagotonic expansion, the autonomic nerves actually stretch out toward the world. In anxiety, on the other hand, we feel a crawling back into the self: a shrinking, a hiding, a constriction (“anguistiae,” “Angst”). In these sensations, we are experiencing the real process of contraction of the autonomic nervous system.” This is where the orgone accumulator enters the picture, as a functional, mechanistic contraption that operates to cause direct change in the organism: “the orgone accumulator charges living tissue and brings about an expansion of the plasmatic system (vago-tonia)” (Reich, 1960, p. 237). Reich believed that by sitting in this box, a person would ameliorate their health (physically and psychologically) through the accumulation of positive orgone energy that he believed was a ubiquitous life-force in the universe. Orgone energy was akin to libidinal energy, as Reich’s pseudoscientific experiments to determine a measurable biological corollary to Freud’s libido led him to this result. This perspective parallels Neutra’s belief in the capacity for the (libidinal) energies present within an individual to be transformed by that which surrounds them.

The orgone accumulator is made up of an outer layer of ‘upsom board’, something like MDF today, and then interior layers of alternating steel wool and fiberglass, finishing with an inner layer of zinc treated sheet metal. Reich’s idea was that the steel wool would attract the energy and the fiberglass would insulate it:

*The atmosphere orgone energy does not ‘seep’ through the openings, but penetrates the solid walls. In relation to the accumulator, the organism is the stronger energy system. Accordingly a potential is created from the outside toward the inside by the enclosed body. The energy fields of the two systems make contact and after some time, dependent on the bio-energetic strength of the organism within, both the living organism and the energy field of the accumulator begin to ‘lamine’ i.e. they become excited and, making contact, drive each other to higher levels of excitation. This fact becomes perceptible to the user of the accumulator through feelings of prickling, warmth, relaxation, reddening of the face, and objectively, through increased body temperature. There is no mechanical rule as to HOW LONG one should sit in the accumulator. One should continue with the organotic irradiation as long as one feels comfortable and ‘glowing.’ (Greenfield, 1974, pp. 372-373)*

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<sup>7</sup> The human autonomic nervous system is divided into two parts, the sympathetic and the parasympathetic nervous systems. The sympathetic nervous system accelerates heart rate, raises blood pressure and also constricts blood vessels, whereas the parasympathetic nervous system slows heart rate, relaxes the sphincter muscles and increases glandular and intestinal activity.



**Figure 7:** Wilhelm Reich, *Orgone Accumulator* (author's own, built in 2012). Photo © Scott Andrew Elliott

**Figure 8:** Microscopic pictures of the materials used to build an orgone accumulator (clockwise from top left: steel wool, sheet metal, fiberglass, MDF). Photo © Scott Andrew Elliott

The particular qualities of the materials that construct the orgone accumulator are what, following Reich's theory, allow for the increase of energy within a person and resultantly lead to a transformation. Accepting that this theory of orgone energy is false, it is interesting that many individuals who have used the device have had significant affective experiences within them. Author William S. Burroughs, known for the censorship of his novel "Naked Lunch" due to its pornographic content, was a follower of Reich's theories and built a number of his own orgone accumulators. In an article he wrote for the pornographic magazine *OUI* (1977, p. 59) he stated, "[T]he orgone box does have a definite sexual effect. I also made a little one from an Army-style gas can covered with burlap and cotton wool and wrapped around with a gunny sack, and it was a potent sexual tool. The orgones would stream out of the nozzle of the gas can. One day I got into the big accumulator and held the little one over my joint and came right off." Without the fictional 'orgone energy,' what remains is a somaesthetic experience of the material enclosure itself. To sit inside a sheet metal enclosure just large enough for your body (as the accumulators were intended to be custom-fit for each owner) offers haptic, visual and auditory sensations that are themselves affective. Perhaps, mirroring Neutra's designs, it is the aesthetic pleasure found in the encounter with the form and materials that lead to the change in libidinal energy?

Might these examples of built surroundings from Neutra and Reich offer insight into the epigenetic potentials present in somaesthetic experiences? Could a Neutra house or the orgone accumulator perform the architectural licking that Kocik speculatively proposed? This interaction between somaesthetic experience and a transformative libidinal energy may hold clues to how phenotype could be made into an artistic material. To move from genotype to phenotype, from the possible to the actual, requires an expression that may come about through a material encounter between a body and its surroundings.

## 5. Libidinal Plasticity and the Material Encounter of the Car Crash

Following the transformations effected by the somaesthetic encounter with surrounding materials in the works of Neutra and Reich, in J. G. Ballard's *Crash* (1973) bodies are transformed through material encounters which take place in violent events. For Ballard, rather than an evolutionary

progression towards selection of traits better adapted to our automobile environments, the chance event of material encounter present in the violence of a car crash offers a transformative possibility. In such an event, the violent merging of these materials (living and non-living) as well as the transfer of energies (kinetic and libidinal) makes the possibilities present in the already ongoing material conversation accessible. These possibilities need not be speculated upon; in this instance both physiological and psychological transformations are actualized. A person is changed by such a material encounter, and whether or not they participated in the selection of the possibility towards its actualisation is questionable.

Ballard finds a sexual dimension in this encounter between body and material surroundings. When flesh, metal and plastic collide at high speed, where the transfer of energies is manifested in the physical trauma of breaking living and non-living materials, what results for Ballard's characters is a transformation of their sexual desires. He writes (1973, p. 29), "This obsession with the sexual possibilities of everything around me had been jerked loose from my mind by the crash." This small metal enclosure that we spend so much of our time in may offer possibilities for transformations through the material encounters we have with it. Similar to Reich's orgone accumulator, this device may increase libidinal energy through somatic experiences. Ballard writes (1973, p. 81), "The passenger compartment enclosed us like a machine generating from our sexual act an homunculus of blood, semen and engine coolant."

These transformations are both physical and psychological, as the violent event leaves its marks on the crash victims as well as shifts their libidinal drives through the development of a fetish for the materiality of the car. These drives, or sexual fetish, lead the characters into further crashes and sexual encounters within cars as their transformations continue. Over the course of the novel, the main character drifts towards homosexuality through his sexual experiments in and with cars. The physical changes to the human bodies are fetishized as well, as a new material representative of the new sexuality that emerges. Describing one character's changes, he writes (1973, pp. 99-100):

*The crushed body of the sports car had turned her into a creature of free and perverse sexuality, releasing within its twisted bulkheads and leaking engine coolant all the deviant possibilities of her sex. Her crippled thighs and wasted calf muscles were models for fascinating perversities [...] Her strong face with its unmatching planes seemed to mimic the deformed panels of the car, almost as if she consciously realized that these twisted instrument binnacles provided a readily accessible anthology of depraved acts, the keys to an alternative sexuality.*

According to Freud (1950, p. 252), present in a traumatic event is an inherent sexual dimension, He writes, "The mechanical violence of the trauma would liberate a quantity of sexual excitation which, owing to the lack of preparation for anxiety, would have a traumatic effect." The transformation that comes about from such a violent event as the car crash may offer an example of plasticity, where "plasticity designates the fluidity of the libido" (Malabou, 2007, p. 80) The plasticity that Freud describes in human sexuality allows for what he terms a sublimation of libidinal energy into creative impulse. He writes (1950, p. 255):

*Sexual instinctual impulses in particular are extraordinarily plastic, if I may so express it. One of them can take the place of another, one of them can take over another's intensity; if the satisfaction of one of them is frustrated by reality, the satisfaction of another can afford complete compensation. [...] Further, the*

*component instincts of sexuality, as well as the sexual current which is compounded from them, exhibit a large capacity for changing their object, for taking another in its place—and one, therefore, that is more easily attainable. [...] It consists in the sexual trend abandoning its aim of obtaining a component or a reproductive pleasure and taking on another which is related genetically to the abandoned one but is itself no longer sexual and must be described as social. We call this process ‘sublimation’.*

Monastic orders who follow a vow of chastity seek to redirect their libidinal energy towards devotion to God. A literary example is described in Thomas Mann’s *Death in Venice* (2004), where the character Gustav has a desire for an adolescent boy, and redirects this desire into writing poetry. Yet this plasticity is entirely psychological and does not address a physical transformation. Ballard’s transformation, or libidinal transmutation, occurs through a somatic experience in an event where the materials of the body and of a constructed surrounding violently interact, and result in both physiological and psychological changes. Furthermore, rather than sublimating the desire into some disconnected act, these desires that are produced by the violent material encounter of the car crash are lived out and expressed. The transformative potential present in the overlap between somaesthetic experience and libido follows through from possibility to actuality.

This marks a parallel between Freudian libidinal plasticity which is only psychological with a physiological plasticity of the flesh and of the epigenome. Perhaps the sexual plasticity that allows for a fluidity of the libido carries over into this physiological realm in a way that allows for physiological changes? The new sexuality and psychological drives of his characters come about not through a genetic adaptation, these were not evolutions that came to pass through generational selection. Rather, by taking up what is on hand through the direct material encounters, a transformation takes place. Through material encounters, Ballard’s characters find ways to adapt, mutate, or transform into new kinds of beings. The sexual dimension of somaesthetic material encounters may lend a degree of plasticity to physiological transformations, and allow for epigenetic transformations to be effected through such events of material encounter.

Exploring the notion of plasticity, Catherine Malabou (2012) argues that both physiological brain injuries and diseases as well as psychological traumas can result in significant transformations in affected individuals, and that such transformations express a negative plasticity inherent to our human condition. Her notion of plasticity is derived from Freud’s theory of the libido, and Malabou’s proposition of a negative plasticity runs counter to both Freud’s and contemporary science’s use of the term to describe positive adaptive mechanisms of healing. She writes (2012, p. 17):

*It is clear that wounds—traumas or catastrophes—are not “creators of form” in the positive sense of the term. We are quite far from the sculptural paradigm of “beautiful form.” If the wound, as the determining cause of the transformation of the psyche, has a plastic power, it can only be understood in terms of the third sense of plasticity: explosion and annihilation. If brain damage creates a new identity, this creation can be only creation through the destruction of form. The plasticity at stake here is thus destructive plasticity.*

Malabou present examples of individuals who have suffered traumatic events (PTSD from exposure to warfare) and traumatic brain injuries, all of which result in a loss of one identity in

exchange for a new one. This negative plasticity, we should note, also raises ethical concerns for how creative practices take up epigenetics as it is clear that there are possibilities to cause harm just as much as to find beneficial transformations.



**Figure 9:** Patricia Piccinini, *Graham*, 2016. Artwork [silicone, fibreglass, human hair, clothing, concrete].  
140 x 120 x 170cm. Photo © Patricia Piccinini. Reprinted with permission.

Patricia Piccinini’s recent sculptural collaboration with the Transport Accident Commission of Victoria (Australia) led to the speculative design of a new human body more capable of withstanding a car crash.<sup>8</sup> Named ‘Graham’ (2016) this example offers material adaptations to the body that allow for a transfer of energy into the body without causing as much damage. Here, the flesh and bone structure has been altered in order to better absorb the violent energy of the car crash, though solely in the physical sense. In the work of Piccinini, the detail of the surface again is responsible for the evocation of imagined possibilities. In reviewing her work, Van Badham (2017) writes, “What’s uncanny about Piccinini’s work is not that an artist’s mind can conjure such creatures. It’s that the finesse of their detail make every variegated body that she crafts seem suddenly possible. But for Piccinini, the beasts she invents are the logical conclusion of what is possible within the ongoing material conversation between evolutionary forces and environmental ones.” This speculative invention that follows what is made possible within the “ongoing material conversation” suggests that there may be current epigenetic opportunities in the direct somatic experience of the car to lead to significant changes in the human organism. However, this work reflects a similar ethos as does the work of Stelarc or ORLAN in the use of body as image and object to speculate on possibilities. What opportunities might we presently have for actualising these possibilities to transform ourselves more tangibly and immediately? Following the propositions outlined by Neutra, Reich and Ballard, what remains to be developed are creative practices in which the affective experience of being within a closely built surrounding—be it architectural, pseudoscientifically medicinal or automotive—leads to epigenetic transformations. It would seem that addressing the plasticity of the libido could offer a direction for such practices to follow.

## 6. Selecting For Epigenetic Change

I propose that it is through a sexual dimension of somaesthetic experience that we will find a way to use phenotype as an artistic medium. It may be that this dimension has always been an important part of our species’ adaptations. Darwin’s original texts outline a difference between natural and sexual selection, a difference explored by Elizabeth Grosz (2011, p. 132), as she writes:

<sup>8</sup> <http://www.meetgraham.com.au/>

*Sexual selection, as an alternative principle to natural selection, expands the world of the living into the nonfunctional, the redundant, the artistic. It enables matter to become more than it is, it enables the body to extend beyond itself into objects that entice, appeal, and function as sexual prostheses [...] Sexual selection unveils the operations of aesthetics, not as a mode of reception, but as a mode of enhancement.*

Grosz's research outlines sexual difference and sexual selection as the origin of difference, as a mechanism shared by living beings (from bacteria on up) that is the condition for all other differences. For Grosz, difference of any kind begins here.

Returning to Kocik, he suggests that our traits may direct our genetics, rather than vice versa. This might reflect the reversal Reich made of Freud's theory of the libido. Kocik writes (2014, p. 31), "Keep your eye on our 'traits'—the genome will fashion itself after our traits and behaviors and not vice versa. In this way the genome will become an advanced type of retrofection—germ cells influenced not only by somatic cells but even more directly by social forces or perhaps psychological factors (though psychosexual retrofection is clearly beyond the scope of this essay)."

Through a reconsideration of the how the body is transformed, artists may develop practices which allow us to live out transformations through material encounters that stimulate epigenetic gene expressions rather than represent the artist's body as image and symbol of experienced transformations. The sexual dimension of such encounters may be precisely this psychosexual retrofection Kocik parenthetically alludes to. By attending to the material encounters we engage in, and finding within them our own potentials of plasticity, we may find ways to effect immediate transformative adaptations and actualize our ongoing desire for change.

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## Figures

1. Stelarc, *Ear on arm*, 2007- (ongoing). Performance/photography. Photos © Nina Sellars.
2. Richard Neutra, *Lovell (Health) House*, 1929. Architecture. Photo © User:LosAngeles / Wikimedia Commons / CC-BY-SA-3.0
3. Richard Neutra, *Lovell (Health) House*, 1929. Architecture. Photo © User:MichaelJLocke /

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4. Richard Neutra, *VDL Studio and Residences*, 1932. Architecture. Photo © User:DavidHartwell / Wikimedia Commons / CC-BY-SA-4.0

5 & 6. Richard Neutra, *Lovell (Health) House*, 1929. Architecture. Photo: Library of Congress, Prints & Photographs Division, HABS CAL,19-LOSAN,66- (Wikimedia Commons / Public domain)

7. Wilhelm Reich, *Orgone Accumulator*, 2012. Installation. Photo © Scott Andrew Elliott.

8. Materials used to make 'orgone accumulator', 2017. Photo © Scott Andrew Elliott.

9. Patricia Piccinini, *Graham*, 2016. Sculpture. Photo © Patricia Piccinini.