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## Embodying the Chimera: Biotechnology and Subjectivity

Bernard Andrieu

“Chacun d’eux portait sur son dos une énorme Chimère” [Each one of them carried on his back an enormous Chimera]  
—Baudelaire, *Le Spleen de Paris*, bk. VI

Until the end of the seventeenth century, the monstrous body had a mythological function: A sign from irate gods, the monster (Kapler 1980) is not malformed like Oedipus’s twisted foot/fate, it is a prodigious creature whose corporeal formation endows it with superior power. However, one must differentiate between fabulous monsters, whose corporeal hybridization remains paradoxical, and biological monsters studied as early as Hippocrates in *Of Generation*, X-I, and Aristotle in *Of the Generation of Animals*, Book IV. Greek mythology includes fabulous monsters, human bodies that have been recomposed with animal attributes such as wings, serpents, and boar tusks for Steno and Euryale (transformed by Athena owing to Medusa’s jealousy), and Medusa, lover of Poseidon and expecting his child also transformed by Athena). Losing or disfiguring its human body defines the fabulous monster as a fall. On the other hand, the chimera is born with a triple animal body, a sort of multiform and polycephalous beast uniting multiple forms in one body (Plato, *The Republic*, bk. IX): lion-headed and dragon-tailed on the body of a goat. Yet specific unity is not maintained, as in the embodiment of Cerberus, the dog with three heads and a tail of snakes (figure 3.1). Cerberus remains a dog when a chimera represents three juxtaposed species. The chimera is a malefic creature whose next of kin are Echidna (half snake, half nymph), Geryon, the three-bodied giant, Medusa (serpent-haired and stony-eyed), Scylla (six claws, mouths and heads, and the roar of a lion) as well as the Sphynx endowed with a maiden’s head and breasts, lion claws, and a dragon tail on a dog’s body.

Bellerophon, queen Sthenoboea’s would-be lover, was exposed to her husband as he spurned her. The king then ordered him to rid the country of Chimera, a fabulous creature



**Figure 3.1**

Milton Montenegro, *Cerberus*, 1999. QuadBlack inkjet print on Arches paper, 16.3 × 16.3 in (41.5 × 41.5 cm) edition of 10. © Milton Montenegro. Courtesy of Tepper Takayama Fine Arts.

born from the monstrous giant Typhon and the viper-bodied nymph Echidna, and who was, according to Homer (*The Iliad*, bk. VI), lion from up front, dragon from the back and goat in the middle. The breach of the laws of hospitality here rests on the adulterous desire felt by the queen for Bellerophon who, in her eyes, had the bad taste of refusing her. The queen was scared by this representation of an object of desire refusing itself to whom desires it. Bellerophon owes his confrontation to Chimera's body to this impossible hand-to-hand combat. All hold his death as certain, but the fabulous creature gives him the opportunity of an initiatic trial. Bellerophon is the child of Poseidon and the queen of Ephyra; he owes his name to his murder of Belleros, tyrant of Corynth, which freed the town. With the help of a gift from the goddess Athena, he manages to tame the winged

horse Pegasus. Then, zeroing in on the monster, he makes a nosedive: Chimera spews flames in defense, but Bellerophon seals its mouth with a leaden ball that melts under the heat, and stifles it to death.

Admittedly, the chimera can be used as a scapegoat as opposed to the unicorn, an emblem of purity and virginity in the Middle Ages. Yet the unicorn is a fabulous animal whose corporeal coherence makes it appealing, the equine body not being too remote from the deerhead bearing its sole horn. The chimera is a mixture of species—lion, goat, and dragon, that inverts the natural order by producing a paradoxical being. It is not an internal metamorphosis of the body, but a complex body. It is not a denigration of the corporeal form as much as an interrogation, through its presence, of the constitution and origin of corporeal identity. The chimera is not a hybrid in the sense that a mule is the hybrid of a donkey and a mare.

In ridding Corynth of Chimera, the mythical body of the semi-god triumphs over the chimerical body through the mastery of fire. Sexuality lies at the heart of the chimerical body insofar as Echidna may be Typhon's sister. The body of the semi-god (armed, it must be said, by Athena, daughter of Zeus whose limbs were temporarily bound by a triumphant Typhon before his destruction by the king of gods) refuses adultery and slays the incestuous daughter Chimera. Morals end up untainted, but the paradigm is set. As Françoise Duvignaud stresses: "The beast always lies close, reminder of a former order. Witness Typhon, monster amongst monsters, whom Gaia to no avail summons as a final attempt of mind perversion. Zeus, ever the bright spark, eventually destroys Typhon, but not before the latter, in a monstrous mating with Echidna, has begotten a progeny that will become the scourge of the centuries to come: Chimera, the Sphynx, Medusa and Scylla." (Duvignaud 1981, 21).

By adopting this technique given by Zeus, the sublunar world can hope to hold sway over the impurity and the malignancy of the chimerical body which cannot last or reproduce, not only because of its incestuous origin, but also because its make-up is heterogeneous.

According to the science historian Jean-Louis Fischer, it is as late as "1830 that Geoffroy Saint-Hilaire gives the science of monsters its name of teratology. As an object of science, the monster becomes an object of comparison, of reflection in the field of embryology as well as in the elaboration of the transformist theories that preceded the theories of evolution" (Fischer 1991, 38). Bellerophon's victory soon is a prodigy no more; it sets the study of chimeras at the heart of the technical domination without which a human being cannot be held as the peer of a God. The chimera is a trial to initiate humans to the dark side of creation: There is no creation without anomaly, there are no creatures without monsters, no whole bodies without mixed bodies.

The chimerical body raises the problem of identity. How can one be such a body, at the same time a lion, a dragon, and a goat? The harpy is part woman and part bird (figure 3.2). A monster is its body flaw, which is to say it sends us back to natural anomalies.



**Figure 3.2**

Milton Montenegro, *Harpy*, 1997. QuadBlack inkjet print on Arches paper, 16.3 × 16.3 in (41.5 × 41.5 cm) edition of 10. © Milton Montenegro. Courtesy of Tepper Takayama Fine Arts.

### **From Mythical to Scientific Chimera**

In science, a chimera is an organism composed of two sorts of cells with different genetic origins, stemming from two different zygotes. Nature generates some chimeras without human intervention. Vegetal chimeras are made of interlocking tissues with genetically different structures, such as the apple tree, the maple, or the sansevieria (an agave-related species). Human chimeras are the result of chromosomal anomalies: Thus the dizygotic twin, whose sibling is usually stillborn, is transfused with hematopoietic tissue (bone-marrow) from the latter, harboring in this way two blood populations from different groups. The human chimera therefore is not the intermediate body of a Prometheus, a Faust, or a Frankenstein.

The imaginary relations that biological sciences have with the nature of the human body put a cast of evil on the changed body. Science may have sold its soul to the devil by preferring genetic immortality to the human condition. Unlike the chimera's body, metamorphosis does not uphold the double biological way, it only transforms the corporeal form, even if the hero's soul is damned: Prometheus is gnawed by his fault, Faust is sold to the devil, and Frankenstein is haunted by his origins. The metamorphosis is not a metanoia, which is to say, a conversion enabling the soul to turn away forever from the shadows in the cave in order to follow the stages of a dialectic ascending toward Truth. The changed body, as opposed to the chimerical body, claims to have done away with otherness whereas it remains inside it to give it identity. Metamorphosis is a failed chimera. The chimera upholds the Same and the Other within a unique double body, for the chimera is double—not a Doctor Jekyll and Mister Hyde, but a biological being whose double identity is always identifiable whenever identity alternation is necessary in the case of a split personality.

Jacqueline Carroy (1993) has illuminated the many historical affinities shared by the myth of split personality and the science vs. occultism schism that motivated many scientists at the end of the nineteenth century. The biological chimera rests upon what Olivier Pourquié calls, in his presentation of Nicole Le Douarin's works, a "substitution of homologous territories" rather than upon the parallelism of complementary identities. The chimerical body contains both quail cells and chicken cells; "the embryo chimera obtained in this way develops normally and the quail cells that compose the neural tube as well as the derivatives of the neural ridge that migrate from the neural folds can be identified through Feulgen-Rosszenbeck's nuclear coloring" (Pourquié 1995, 42). Identifying the cells stemming from the transplant can be done regardless of the state of differentiation of the cells. Fusion is incomplete for the chimera as it maintains the Different within the Same. One needs to follow the migration of the different within a unit without the latter disappearing: each is telltale of the other.

Yet the model of the chimerical body belongs to a contemporary fantasy, that of developmental biology. Winkler created the first vegetal chimeras in 1907: These heteroplastic grafts consisted of the paired cells from two different species without their respective hereditary potentials being modified. The chimera can not transmit its somatic state as long as one does not tinker with germinal cells.

### **The Chimera's Transplanted Body**

At the beginning of the twentieth century, the scientific model of the chimerical body showed the transplanted body as the representation of the modern subject. Through transplants, the subject was able to step into the technical possibility of building a body while giving it an identity.

Chimerical biology was born when Mathieu Jaboulay (1860–1913) and Alexis Carrel (1873–1944) attempted their first grafts, respectively in 1906 and 1908. For any patient receiving a transplant, there remains the problem of the tolerance of the chimerical body. In this respect, Christian Cabrol prophesied:

By 2015, it would be good for this tolerance to be obtained in all cases, in the wake of the transplant, for the receiving organism to accept two sorts of organs, its own and those transplanted.—But that’s what was formerly called chimerism!—Indeed! In Ancient Greece the chimera was a fabulous animal showing the characteristics of different species, e.g., a human torso on a horse’s body for centaurs [figure 3.3]. Understanding the mechanisms of tolerance would be an undeniable breakthrough on the way to the complete success of transplants, sparing the host the drawbacks of an immunodepressing treatment and the liability of chronic rejection leading to the progressive destruction of the transplant. (Cabrol 1995, 148)

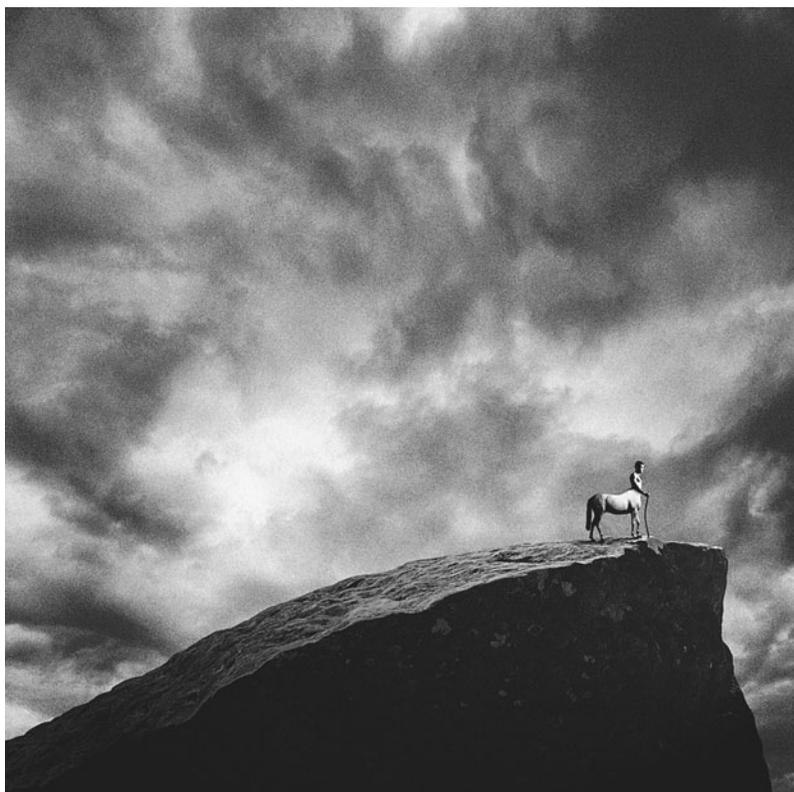
The host must incorporate the Other into his own identity in order to live on. He never wholly becomes a chimera because of the technological contribution of an organ alien to the body per se. This technological contribution keeps the transplant within the frame of the mechanical body. As David Le Breton, the body sociologist, makes it clear: “Whenever symbolism deserts the body, there indeed remains of the latter but a set of wheels, a technical organization of interchangeable functions” (Le Breton 1993, 274–275). If this objectification of the body does have a part in ending the incarnate man of Christianity, it also points to a new relation of the subject to living matter. The transfiguration of the body defines a mode of incarnation that is subjective and not metaphysical anymore: Only the subject now wants to go beyond his body by defining it as a complex network of elements grafted together.

In biologist and philosopher Michel Tibon-Cornillot’s eyes,

chimerical animals, plants or bacteria herald the engineering of a new biological nature in which one can decipher anew an order of purposes which, in some way, have replaced the old providential ends that had carefully been expelled from the world. The emergence of these new beings, transgenics and chimeras, is set within such violent anthropocentrism that their presence really would not be a problem. (Tibon-Cornillot 1992, 232)

For all that, these new “rational-imaginary” objects are not virtual objects. They belong to the biological compatibilities allowed by nature even if not produced by nature itself along the course of its evolution. Even if chimeras depend mostly on scientific production, they stem from human understanding of life’s mechanisms.

The legitimacy of this production should not be questioned. Like philosopher Max Marcuzzi, one can, of course, see “artificial bodies” in these productions, and assert that



**Figure 3.3**

Milton Montenegro, *Centaur*, 1998. QuadBlack inkjet print on Arches paper, 16.3 × 16.3 in (41.5 × 41.5 cm) edition of 10. © Milton Montenegro. Courtesy of Tepper Takayama Fine Arts.

Teratology is biology in its widest form, and ontology in its strictest form; but above all, the lack of an absolute reference or harmony, whether divine or natural, that could be held as an objective and constant norm, there is no other norm left but the individual from which to decide what is or is not an aberration, and thus also to decide what makes the body, and what form it can have. (Marcuzzi 1996, 176–177)

Chromosomal aberrations and anomalies are, however, an essential dimension of living matter. The life sciences have always studied these countermodels in order to understand the reverse effect of nature's mirror through the two-way mirror of experience and experiment. What makes the chimera topical is not fashion as much as the definition of a new

world, in which the natural human being's essence is material to the point of coercing the body, fitting it with prostheses and grafts.

### **Transgenic Chimeras and Biopower**

The use of biotechnologies feeds the illusion of an uncastrated body, a body within which we could be both one and the other, masculine and feminine. Patrick Baudry, a sociologist, understands the yearning to abolish all limitations as a figure of the "body extreme" (Baudry 1991, 1996) in that stepping over these limitations would entail the body's disappearance. Yet from the point of view of the life sciences, this extreme relation to the self accomplishes itself through mutation. Individual use of one's body resulting from an ideological conjunction of liberalism and biology empowers the subject of our time to transform not only the state but also the nature of his body.

To be sure, bioethical laws in several countries do now put a ban on human transgenesis because of the immorality of fiddling with our hereditary genetic patrimony, but for how long? All in vitro interventions should create nothing other than mosaic chimeras in order to ensure life through a therapeutic modification of the somatic cells with no definitive intervention on the germinal cells. Positive eugenism is thus proscribed, returning the human transgenic chimera to the position of literary object; yet negative eugenism does surround us: Anyone will admit that eliminating genetic diseases when selecting embryos for in vitro fecundation is very convenient to avoid necessitating abortion or having to raise a seriously handicapped child. Anomalies are eliminated from the start, thus recomposing the human chimera through the purification of the quality of its patrimony. At the beginning of our century, metamorphosis turns into a mode and a fashion of change of appearance, all too often confused with a change of being. Truism triumphs but the analogy with the human body remains dominant. By betting on all possibilities one does loosen the notion of being without asking the fundamental questions on the implementation of transgenesis. Discarding the human body is less an ecstasy than a final parting from one's initial genetic patrimony. Is not the wish to end the castration imposed by our genetic identity an acknowledgement of our species' self-loathing, or the evidence of our forgetfulness of the genetic mutations inflicted on the children of Chernobyl or Hiroshima? The human body will become a genetic chimera when, like animals and plants, humans have finally replaced the myth of Genesis and the Fall by that of transgenesis. In the 1946 second preface to his 1931 novel *Brave New World*, Aldous Huxley described this revolution in the following terms: "The truly revolutionary revolution will take place, not in the outside world, but in the soul and flesh of human beings" (Huxley 1946, 12). Individual corporeal change is not enough anymore; a change of species would be in order.

If the eighteenth century was the century of the transvestite, and the end of the nineteenth century that of the hermaphrodite, as Michel Foucault stated in 1980, we still need

to find out what the theme of the chimera heralds in its pervasion of the beginning of the twenty-first century. Under the conditions described by Foucault, the human chimera would not leave the choice of his sex to the individual. It would be the logical consequence of the ideological link instituted by biopower between sex and truth: Having a real sex is not understood by the human chimera as the reduction of social sex to biological sex. Truth reaches here its biological acme by merging both sexes into one, the couple incarnated into a sole genetic unit. Having become transgenic, humans will have no more choice: Science will decide upon the validity of the body, health or economy once more being used as alibis. By committing itself to transgenesis, transgenetic research has become a French national priority, which comes down to asking Foucault's initial question: "Do we really need a real sex?" (Foucault [1980] 1994, bk. IV, 116). The chimera may be the last figure of a real sex, biotechnologically engineered as a whole, providing at last the negation of castration through the demiurgic integrity of creation.

### **To Everyone Their Chimera**

The body has become a sign of identity where it once was but a modality of social appearance and surface (Le Breton 2002). Appearance is out, embodiment is in. The refusal of dualism is not as much expressed by a wish to bid the natural body goodbye as by the creation of a body of one's own. Through a body of his own, the subject can model form, but also matter itself: Marking the body is the first mode of this subjectification of the body, and genetic manipulation offers the possibility of shaping a humanized matter. Identity is building itself a cultural form through technological means. The cult of the body not only develops freedom of the self, it has also become self-cultivation and self-culture. If the capitalist system carries on maintaining subjectivity within the indefinite dividuation of the body by renewing its commodification, the consumer is tempted to consume himself in this circulation.

Within this mainstream liberal ideology, a body of one's own is held as an individual body in which we should only delight. Such consumerist hedonism satisfies the human body up to the excesses of obesity and high-risk behaviors. Once the body has become itself, the individual can also subjectify it by personalizing it rather than withdrawing into individualism. Corporal decoration fits into the pattern of expression when subjectification attempts to incarnate the subject in the very matter of the body. Being is not an essence, either exterior or transcendental to the subject. Sartre managed to reduce human essence as a whole to existence: I am, I am but my actions. Existentialism was to find privileged modes in feminism and worldly embodiment. The gender and the modes of their incarnation drew every man and woman into an identity struggle for the acknowledgement of corporeal existence. Being carnal consisted in directly incarnating one's existence through identity intensification as well as cultural exaltation. The cult of the body has been superseded by its culture and cultivation. The latter create their corporeal values in the subject's

very matter: his or her sex and sexuality, his or her actions, his or her genes or brain. Liberation of the body has led to an intense yearning for the incarnation of a chimerical body.

By using both biology and phenomenology, my notion of the incarnation of the subject or that of the embodied mind is similar to Francisco Varela's founding work. By suggesting to start from the "lived body" to account for cognition, the notion of incarnation (or embodiment) no longer has the dualistic meaning of Christian tradition. Spirit (the mind) is now present through the body that produces it. According to Varela, a compromise should now be reached, studying cognition neither as the reconstitution of a preordained exterior world (realism), nor as the projection of a preordained interior world (idealism), but as embodied action: "By using the term *embodied* we mean to highlight two points: first, that cognition depends upon the kinds of experience that come from having a body with various sensorimotor capacities, and, second, that these individual sensorimotor capacities are themselves embedded in a more encompassing biological, psychological, and cultural context" (Varela, Thompson, and Rosch [1991] 1993, 234).

Let us find the link between biology and phenomenology that Maurice Merleau-Ponty long looked for: *enaction* shows how cognitive structures emerge from the recurring sensorimotor schemes that guide action through perception. The phenobiotechnology of subjectivity is not the new unified science, but an interknowledge: Everyone wants an incarnate body.

### **A Phenobiotechnological Subject**

The wish for a chimerical body is now only limited by biotechnological fantasy. Deciding that a wholly bio-artificial body might not be compatible with bioethical norms and laws would be to forget the biosubjectivity ensured by the progress of technological medicine. The individual interest of one human being invoking his right to live in a dignified body would legitimize research on artificial life. Supposing we could shape our bodies according to our wishes: Would that be enough to abolish this object/subject relation, to embody the subject fully? For the body, as a living subjectivity, is of such temporality and spatiality that no content can ever reduce it. By changing his or her body and making it as close to his or her wishes as possible, the biotechnological being would in effect change biological time, not to stop or stretch it but to live our biological time intensely as a biosubjective movement. By shaping the matter of his or her body, the subject not only forms him- or herself, the subject also gets information about the movement of his or her flesh. By changing the body, the subject finds itself to be moving. Rather than to construct him- or herself in order to reach some functional or aesthetic ideal, the moving subject would like, in the extreme, to modify him- or herself endlessly.

Given that the body is no more natural, or at least that the individual and social representation of the body defines it as entirely cultural and technical, we can deconstruct and reconstruct the body endlessly. The body as a whole is already replaceable, like parts in a biotechnological Meccano. Mechanization of the living must nonetheless be functional in its artificiality, as in Jean-Luc Nancy's 1999 text *The Intruder* about his transplant. Our mental attachment to subjectivity maintains us in this imaginary unity of the self, of the body proper that produces the illusion of mental independence from our biological state. We all find out that our given body gets worn, falls ill, changes with age, and is degraded by time. By changing the body, we could stop this biological temporality either by slowing down the aging process, or by making up for the problems of time with a spatial renewal of the body.

### Conclusion

Through the creation of new species and within the human species, bioselected individuals such as Baby Adam—born in 2000, genetically screened and selected to save his ill sister—demonstrate that changing the body is now less virtual than feasible using biotechnology. There remains for a specific alibi to be found. These changes not only imply biological consequences, but also social ones. The changes in family relations, sexual intercourse, and the relation to one's body are now given legitimacy by the genomic sciences.

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