Plasticity: Catherine Malabou Reading Group and Seminar

“Plasticity’s Fields of Action” from What Should We Do with Our Brains?, 2008 (16pgs)

Key Terms: open/closed plasticity, differentiate/ transdifferentiate, multi-potent/ pluri-potent, developmental plasticity, apoptosis, modulational plasticity, long-term potentiation/ long-term depression, reparative plasticity, neuronal renewal

Referenced Readings:
Marc Jeannerod: Le Cerveau intime
Jean-Pierre Changeux: Neuronal Man
Jean Claude Ameisen: La Sculpture du vivant

“Introduction” from The New Wounded, 2012 (20pgs)

Key Terms: cerebrality, libido, appetites, emotional brain, exogenous, endogenous, sociopolitical trauma, organic trauma, event, wound, trauma, Catastrophe

Referenced Readings:
Alexander Luria: Traumatic Aphasia: Its Syndromes, Psychology and Treatment
Oliver Sacks: The Man Who Mistook His Wife for a Hat
Sigmund Freud: Thoughts for the Times on War and Death

“On Neural Plasticity, Trauma and The Loss of Affects” from Self and Emotional Life, 2013 (7pgs)

Key Terms: wonder, plasticity: positive and negative, destruction, disconnection, affect, Anton’s Syndrome

Referenced Readings:
Mark Solms and Oliver Turnbull: The Brain and The Inner World: An Introduction to the Neuroscience of Subjective Experience
Antonio Damasio: The Feeling of What Happens: Body and Emotion in the Making of Consciousness
Freud: Civilization and Its Discontents

“Neurological Objection: Rehabilitating the Event” from The New Wounded, 2012 (19pgs)

Key Terms: traumatic war neurosis, accident, the sexual, somatic wound, post-traumatic stress disorder, DSM,

Referenced Readings:
Françoise Davoine and Jean-Maz Gaudillièrre: History Beyond Trauma: Whereof One Cannot Speak, Thereof One Cannot Stay Silent
Louis Crocq: Les traumatisms psychiques de guerre
Judith Lewis Herman: Trauma and Recovery
Freud: “Traumatic Neurosis” from The Language of Psychoanalysis
Freud: Beyond the Pleasure Principle
Freud: Psychoanalysis and the War Neurosis
Freud: New Introductory Lectures on Psychoanalysis
Otto Fenichel: *The Psychoanalytic Theory of the Neurosis*
Boris Cyrulnik: *A Marvelous Misfortune*

“Will Sovereignty Ever Be Deconstructed?” from *Plastic Materialities, 2015* (12pgs)

Key Terms: sovereignty, king, biopower, biopolitics, symbolic, plasticity of difference, epigenetics, vibrant matter

Referenced Readings:
Thomas Hobbes: *Leviathan*
Giorgio Agamben: *Homo Sacer*
Jacques Derrida: *Acts of Religion, Beast and The Sovereign*
Michel Foucault: *Truth and Power, Society Must Be Defended, History of Sexuality*
Deleuze: *Bodies outside organism’s, How do we Recognize the Structuralism?*
Ernst Kantorowicz: *The King's Two Bodies: A Study in Mediaeval Political Theory*
Eric Santrer: *The Royal Remains: The People’s Two Bodies and the Endgames of Sovereignty*
Levi-Strauss: *On the Work of Marcel Mauss*
Conrad Waddington: “Epigenotype"
Schwartz and Begley: *Mind and the Brain*
Eva Jablonka and Marion J. Lamb: *Evolution in Four Dimensions*
Jane Bennett: *Vibrant Matter*

**Whither Materialism? Althusser/Darwin from Plastic Materialities, 2015** (13pgs)

Key Terms: marxism, materialism, teleology, dialectical teleology, encounter, nothingness/void/point zero, crystallization, social darwinism, adaptation, selection, contingency

Referenced Readings:
Jacques Derrida: *Specters of Marx*
Louis Althusser: *The Underground Current of the Materialism of the Encounter*
Charles Darwin: *Origin of the Species*
Niccolò Machiavelli: *Prince*
Karl Marx: *Critique of Hegel’s Philosophy of Right*
Georg Wilhelm Friedrich Hegel: *Elements of the Philosophy of Right*
Pierre Bourdieu & Jean-Claude Passeron: *The Inheritors*
Friedrich Nietzsche: *Ecce Homo, Geneology of Morals*
Gilles Deleuze: *Difference and Repetition*

**The Brain of History or the Mentality of the Anthropocene, 2017** (16pgs)
Catherine Malabou

Key Terms: Anthropocene, geological agent, long-term temporality, mentality, deep history, neurohistorical, phenotypical malleability, evolutionary developmental biology, cognitive development, embedment, arche fossil, addiction theory, psychotropic, history of mentalities

Referenced Readings:
Daniel Lord Smail: *On Deep History and the Brain*
Edward Wilson: *In Search of Nature*
Mary Jane West-Eberhard: *Developmental Plasticity and Evolution*
Lambros Malafouris: *How Things Shape the Mind: A Theory of Material Engagement*
Quentin Meillassoux: *After Finitude*
Marshall McLuhan: *Understanding Media: The Extensions of Man*
Fernand Braudel: *The Mediterranean and the Ancient World*
Philippe Aries: *The Hour of Our Death: The Classic History of Western Attitudes toward Death over the Last One Thousand Years*
François Dosse: *L'histoire en miettes: Des Annales à la “nouvelle histoire”* (Fragmented History: From the Annales School to “New History”)
Jean Delumeau: *Sin and Fear: The Emergence of a Western Guilt Culture, Thirteenth to Eighteenth Centuries*
What Should We Do with Our Brain?

Foreword by Marc Jeannerod
Translated by Sebastian Rand

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**Translator’s Note**

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speak simultaneously of nervous depression, hand transplants, and lesion repair. I would like to do this in order to stigmatize the definitional magma in which, in the end, we all bathe, the author of this book along with everyone else. Speaking for myself, I would say that I have been interested for a long time in plasticity, whose genesis and whose meaning in the philosophical tradition I have, in previous efforts, attempted to elucidate and reconstitute.24 The study of neuronal plasticity and cerebral functioning, and the reading of important texts by cognitive scientists dedicated to this functioning, have been much more than an enrichment for me: they have been a true test as well as a confirmation, a renewal, and a concretization of the philosophical meaning of plasticity. The critical epistemological exercise carried out in this book thus presents itself as an enterprise of rectification and sharpening of the usage of this concept.

But let us not forget that the question What should we do with our brain? is a question for everyone, that it seeks to give birth in everyone to the feeling of a new responsibility. The inquiry conducted here thus ought, beyond the critical imperatives just announced, to allow anyone who consents to follow its path to think new modalities of forming the self, under the name of “plasticity” and beyond the overly simplistic alternative between rigidity and flexibility. This means asking not “To what point are we flexible?” but rather “To what extent are we plastic?”

Plasticity’s Fields of Action

Between Determination and Freedom

In mechanics, a material is called plastic if it cannot return to its initial form after undergoing a deformation, “Plastic” in this sense is opposed to “elastic.” Plastic material retains an imprint and thereby resists endless polymorphism. This is the case, for instance, with sculpted marble. Once the statue is finished, there is no possible return to the indeterminacy of the starting point. So plasticity designates solidity as much as suppleness, designates the definitive character of the imprint, of configuration, or of modification. According to this first limit or semantic extreme, plasticity, though not altogether assimilable to rigidity, marks a certain determi- nation of form and imposes a (very strict) restriction on the capacity for deformation, re-formation, or explosion. We will see that this somewhat “closed” or restrained signification is essentially at work in the developmental plasticity.
of neuronal connections tied to the generic determinism that prevails over the constitution of every brain.

The second limit on the range of the concept of plasticity is marked, inversely, by an "open" or unrestrained definition. According to this second limit, plasticity designates a much more effective transformative ability. This involves, not an infinite modifiability—we have not yet come back around to polymorphism—but a possibility of displacing or transforming the mark or the imprint, of changing determination in some way. As an example of such a meaning, let us consider the properties of so-called "adult" stem cells (at work in the adult organism and thereby distinguished from "embryonic" stem cells). Adult stem cells are nonspecialized cells found in specialized tissues (the brain, bone marrow, blood, blood vessels, the retina, the liver, etc.). They renew themselves, and most of them specialize, in order to produce all the types of cells in their tissue of origin that normally die. This is how, for example, mature blood cells are made out of bone marrow stem cells. But while the majority of adult stem cells generate cells similar to those of the tissue they come from, it has been discovered that some of them (notably skin stem cells) can transform themselves into different types of cells (for example, nerve or muscle cells). One then says that they "transdifferentiate" themselves, that is, literally, that they change their difference.3

This capacity to differentiate and transdifferentiate themselves is called, precisely, stem-cell plasticity. In the first case—the capacity to differentiate themselves into cells of the same tissue—stem cells are called multipotent.3 In the second case—the capacity to develop themselves into types of cells specific to other tissues—stem cells are called pluripotent.4 Stem-cell plasticity—which allows us to conceive of a sort of range of differentiation between multipotency and pluripotency—is an extremely striking example, perhaps

the very paradigm, of the "open" meaning of plasticity. According to this meaning, plasticity designates generally the ability to change one's destiny, to reflect one's trajectory, to navigate differently, to reform one's form and not solely to constitute that form as in the "closed" meaning. This open meaning is essentially at work in the plasticity of synaptic modulation, as we will see when we study the interplay of the modification of synaptic connections and "secondary neurogenesis"—the renewal of neurons in the adult brain, starting, precisely, from stem cells.

Thus, with plasticity we are dealing with a concept that is not contradictory but graduated, because the very plasticity of its meaning situates it at the extremes of a formal necessity (the irreversible character of formation: determination) and of a remobilization of form (the capacity to form oneself otherwise, to displace, even to nullify determination: freedom). It is this complex, this synthesis, this semantic wealth, that we ought to keep in mind throughout our analysis.

The Three Plasticities

We will now look more closely at the biological phenomenon of brain plasticity according to its three major roles: developmental plasticity, modulatory plasticity, and reparative plasticity.

Developmental Plasticity: The Formation of Neuronal Connections

What do we find in the brain? Billions of neurons (around twenty billion in humans) connected in a network of innumerable links, the synapses. "The human brain," says Changeux, "makes one think of a gigantic assembly of tens

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of billions of interlacing neuronal ‘spider’s webs’ in which myriads of electrical impulses flash by, relayed from time to time by a rich array of chemical signals.” These “spider’s webs,” neuronal connections also called “arborizations,” are constituted progressively over the course of an individual’s development. We use the term plasticity precisely to characterize this neuronal genesis. The brain, in effect, forms itself. “The human infant is born with a brain weighing about 300 grams—20 percent of the weight of an adult brain. . . . One of the major features of the development of the human brain, then, is that it continues well after birth, for about 15 years.”

Everything begins with establishing connections and then multiplying them and making them more complex. The growth in mass of the brain coincides with the extension of axons and dendrites, the formation of synapses, and the development of myelin sheaths around the axons. This development is subject to strict genetic determinism. As Jean-Maurice notes, from the point of view of their genesis and their constitution, “all human brains resemble each other.”

The connections that constitute the anatomy of the mature brain are obviously not the result of chance or of spontaneous arrangements; the migration of nerve cells and their adaptation to their targets are programmed. He continues:

To take just one example, the fibers that come from the retina and transport visual information end their journey, in all individuals, in the visual part of the cortex—that is, in the occipital lobe, occupying the rear part of the brain; in all individuals, connections are established between this visual region and other regions situated in the parietal lobe and in the temporal lobe, and so forth. The adult brain therefore reflects the existence of a pre-established plan that causes brain anatomy to be the same from one individual to the next.

But if neuronal genesis corresponds to a “pre-established plan,” why talk about plasticity in order to characterize this development? For two essential reasons, which, within the context of development, have to do with (1) establishing connections, a process we have just mentioned, and (2) modeling those connections (which ought not to be confused with the modulation of synaptic efficacy). In both cases, it is the execution of the genetic program that works in a plastic way. There is a sort of plastic art of the brain—hence the use of the term plasticity in this context. And it is here that the restrained or “closed” signification of the concept has to be taken into account: the sculpting of a determinate form.

In the course of the process of establishing connections, the sculptor’s chisel is the phenomenon called “apoptosis” or “cell death.” This death is a normal phenomenon. Again it corresponds to the execution of a genetic program, leading to the elimination of useless connections and to the progressive sculpting of the definitive form of the system by fitting nerve fibers to their targets. In the human brain, neuronal death begins at the end of gestation and continues after birth, for at least the first six months of life. It continues in adults at a much slower pace. “This neuronal ‘sacrifice,’” writes Changeux, “is part of normal development; indeed, it constitutes one of its critical phases.” In an eloquently titled book, The Sculpture of the Living, Jean-Claude Ameisen insists that the brain, far from being, as was previously believed, an organ fully constituted at birth, simultaneously receives and gives itself form. “Cell death,” he writes, “is . . . a tool allowing the embryo to work out its form in its becoming, by an eliminative procedure that allies it with sculpture.”

Plasticity's Fields of Action
From this stage of development on, however, once the definitive form of the system has been sculpted, "genetic determination begins to slacken," as Jeanerod explains. "After birth, the topographic network put in place during embryogenesis and stabilized by neuronal death and by the elimination of connections begins to function under the influence of external factors. This functioning brings with it a new phase of modeling of connections." The role of the surroundings is therefore fundamental here. A great deal of the development of the human brain is accomplished in the open air, in contact with the stimuli of the world, which directly influence both the development and the volume of connections. The visual system, for example, is not entirely functional at birth. The synapses connecting fibers coming from the retina to neurons in the visual cortex are not yet entirely formed. Information received from outside activates the synapses and encourages maturation. In this sense, in the second phase of development one can speak of a modeling of synapses or a mechanism of synaptic plasticity—always tied, as we have seen, to a genetic program.

The genesis of the brain, through the two phases of establishing connections and their maturation under the influence of the surroundings, thus makes evident a certain plasticity in the execution of the genetic program. In both cases, the brain appears at once as something that gets formed—progressively sculpted, stabilized, and divided into different regions—and as something formative: little by little, to the extent that the volume of connections grows, the identity of an individual begins to outline itself. But the more time passes, the more this "first plasticity" loses its determinist rigor. The sculptor gradually begins to improvise. Bit by bit, the modeling becomes that which our own activity imprints on the connections: "our brain...modeled by our own activity, by our interactions with the external world, by the influences we have received in the course of our education, knows our history and our trajectory. From this intimacy is born a profound identity between the functioning of our brain and our conception of the world, an identity of views, one might say."

In fact, this first type of plasticity is closely tied to the second, both because the influence of the surroundings gradually takes over from epigenetic sculpting and because it engages in a more and more precise activity. The restrained or "closed" meaning of plasticity very quickly runs into its "open" signification: the "freedom" in which determinacy and nondeterminism cross paths in an astonishing way. Indeed, we see that cerebral morphogenesis results not in the establishment of a rigid and definitively stable structure but rather in the formation of what we might call a template. This is then refined (sculpted) during development and, in a subtler but always powerful way, throughout life. The nervous activity of pre-established circuits thus takes over from apoptotic sculpting. Henceforth the environment of the brain qua organ (the modeling of connections) and its external environment (synaptic modulation by influence of the surroundings) play the role of morphogenetic factors.

Modulational Plasticity: The Brain and Its History

At this point, we immediately encounter brain plasticity's second field of action: the modification of neuronal connections by means of the modulation of synaptic efficacy. Without a doubt, it is at this level that plasticity imposes itself with the greatest clarity and force in "opening" its meaning. Indeed, there is a sort of neuronal creativity that depends on nothing but the individual's experience, his life,
and his interactions with the surroundings. This "creativity" is not reserved solely for the human brain but is already at work in the most rudimentary nervous systems.

Such a plasticity, consisting in the fashioning of interconnections and in the modulation of synaptic efficacy, was first brought to light by the Canadian neurologist Donald Holding Hebb. At the end of the 1930s, various experimental observations led him to abandon the concept of a rigid localization of memory circuits along the lines of the model of reflex circuits described by Pavlov. According to Hebb, we must postulate the existence of "plastic synapses" capable of adapting their transmission efficacy. Hebb formulated the hypothesis of neuronal circuits capable of self-organization, that is, of modifying their connections during the activity required for perception and learning. The synapse is the privileged locus where nerve activity can leave a trace that can displace itself, modify itself, and transform itself through repetition of a past function.

The capacity of synapses to modulate their efficacy and to modify the force of their interconnections under the influence of experience works in a double sense. The efficacy of the synapse (its capacity to transmit signals from neuron to neuron) either rises, which is called "long-term potentiation" (LTP), or diminishes, which is "long-term depression" (LTD). This can be verified even in an animal like the alyssia. Its central nervous system is simple, composed of eight pairs of ganglia situated around its esophagus and one large abdominal ganglion. The alyssia has a small set of stereotypical behaviors, among them a number of protective maneuvers, such as retracting its siphon and its gills. But the intensity of its self-defense reflex is modulated by experience. Repeated innocuous stimulation of its mantle results in a diminution of the reflex (a habituation), which manifests as a decrease in the size of the retracting motion. This

habituation is accompanied by a depression in synaptic activity correlated to the amount of neurotransmitter emitted at the level of the motor-sensory synapse.

The phenomena of long-term depression and potentiation show up with much more clarity in the processes of adaptation, learning, and memory at work in birds. The black-headed titmouse, for example, stores food in caches and later retrieves it, practically infallibly. Researchers have been able to establish that the size of one of the brain regions (the hippocampus) implicated in this process is greater in this bird than in others that do not stockpile their food. That is, species that practice such stockpiling have significantly larger hippocampuses than others. This change results from a growth in the number of new neurons, from a diminution in cell death (apoptosis), and from an increase in the connections between the neurons of the hippocampus. The hippocampus thus manifests a remarkable structural plasticity.

Potentiation and depression are not just synaptic processes in which one or more stimuli induce immediate activations; they are also long-term modifications, capable of changing form (a change in the size of brain region, a variation in the permeability of a regularly activated region) and of undoing a trace in order to remake it differently (the lability of the mnemonic trace). Generally, some nerve networks increase their performance by "depressing" synapses involved in cognitive tasks that have led to errors in the course of motor-system education. This phenomenon shows up quite clearly in the human brain during all learning processes. In the course of learning to play the piano, for example, the mechanism for depressing entry signals corresponding to incorrect movements ("mistakes") makes possible the acquisition of the correct movements. In the case of potentiated connections, synapses enlarge their area
of contact, their permeability rises, and nerve conductivity is more rapid. Inversely, a little-used or "depressed" synapse tends to perform less well. Neurons somehow remember stimulation. Everything happens as if there were no stabilization of memories except on the condition of a potential destabilization of the general landscape of memory.  

Long-term potentiation is therefore structurally tied to long-term depression, and this tie constitutes the differentiating or transdifferentiating force of neuronal plasticity. By analogy with the process of becoming that stem cells undergo, one could claim that neuronal connections, because of their own plasticity, are always capable of changing difference, receiving or losing an imprint, or transforming their program.

The fact that synapses can see their efficacy reinforced or weakened as a function of experience thus allows us to accept that, even if all human brains resemble each other with respect to their anatomy, no two brains are identical with respect to their history. The phenomena of learning and memory show this directly. Repetition and habit play a considerable role, and this reveals that the response of a nervous circuit is never fixed. Plasticity thus adds the functions of artist and instructor in freedom and autonomy to its role as sculptor. In a certain sense, it is possible to assert that the synapses are the future reserves of the brain. They are not immobilized and do not constitute simple transmitters of nervous information but rather have the power to form or to reform this very information. "The efficacy of the synapses," declares Jeannerot, "varies with respect to the flux of information traversing them: during infancy and throughout life, each one of us is subject to a unique configuration of influences from our external surroundings, which resonates in the form and the functioning of the brain's networks."

This allows us to put back into question the old dogma that the adult brain steadily loses its plasticity, the dogma that the brain can of course acquire new information but can know no great change in its capacity to learn, its memory function, or its global structures except in the direction of decline or degeneracy. On the contrary, we see that there exists an ongoing reworking of neuronal morphology.

Reparative Plasticity: The Brain and Its Regeneration

This point leads to our treatment of plasticity's third field of action: repair. Two distinct processes fall under the heading of reparative plasticity: neuronal renewal, or secondary neurogenesis, and the brain's capacity to compensate for losses caused by lesions.

What are we to understand by "neuronal renewal" or "secondary neurogenesis"? According to what we have just said, it would seem that a primary plasticity—morphogenetic—is followed by a modulatory plasticity that modifies synaptic efficacy but does not affect the anatomical stability of the brain, as though this plasticity somehow operated inside a closed system. "Certain scientists," declares Heather Cameron, "still cling to a very rigorous form of the hypothesis of a stable brain, according to which there is no anatomical plasticity in the adult brain, and especially not in the cortex; they hold that the functional plasticity underlying learning mechanisms requires only modifications in the force of the synapses, produced by a modification in the receptors or in the intercellular environment of the neuron at the molecular level." But this dogma of the stable brain is not quite right. In fact, she continues, "we know already that certain neurons in regions important to the learning process renew themselves continuously—which constitutes..."
a relatively important anatomical modification.” Even if the role of stem cells in the adult brain and their localization still remain poorly known, even if it is probable that secondary neurogenesis does not affect all regions of the brain, a renewal of nerve cells in adulthood exists all the same, a renewal that, in opening untapped perspectives on brain repair, modifies the way in which we must view the functioning of the brain.

A recent study of the neocortex in primates has produced evidence of new neurons in three regions of the associative cortex: the prefrontal region, the inferior temporal region, and the posterior parietal region. “This result is particularly interesting because the associative cortex plays an important role in high-level cognitive functions, while the striate cortex [in which no renewal is observed] participates in the handling of information with a visual origin. This difference makes one think that neurogenesis could play a key role in essentially plastic functions, while it would be pointless for low-level functions like the handling of sensory data, which functions are generally stable throughout life.”

The production of new neurons therefore does not simply serve to replace cells that have died; it participates in modulatory plasticity and, in doing so, opens the concept of plasticity slightly more, just far enough to unsettle the concept of stability. Once more: the statue is alive, the program quickens itself; right where we have so often believed we would find only mechanism, we find a complex entanglement of different types of plasticity, which contradicts the ordinary representation of the brain as machine. Alain Prochiantz affirms:

One of the major characteristics of the nervous system is, without a doubt, its plasticity. The brain cannot be considered to be a network of permanently established cables, with cerebral aging being the result of an increasing number of units in this circuit becoming disconnected from the network and going out of operation. Although this has not positively been demonstrated except in a few experimental models, we can assume that every day new fibers are growing, synapses are becoming undone, and new ones are being formed. These changes in the neuronal . . . landscape mark our capacity for adaptation, our capacity for learning and improvement, which continue until an advanced age, and in fact until death.25

In an article entitled “The Curious Partition of New Neurons,”26 researchers assert that “in light of observations of secondary neurogenesis, it appears clear that the adaptive capacities of the nervous systems of birds and adult mammals are not solely the result of variations in synaptic connections. They are dependent on the production or the renewal of neurons in some very precise regions—regions that have the common characteristic of having functions tied to learning and/or memory. In this context, secondary neurogenesis also seems to permit a subject’s personal experience routinely to leave an imprint on the core of neuronal networks, in the form of regular morphological and functional reworking. Adult neurogenesis, being the final mechanism of plasticity and one strongly controlled by a subject’s personal experience and environmental interactions, very likely constitutes an additional mechanism of individuation—with the major difference that it is operational throughout life.”27

The idea of cellular renewal, repair, and resourcefulness as auxiliaries of synaptic plasticity brings to light the power of healing—treatment, scarring, compensation, regeneration, and the capacity of the brain to build natural prostheses. The plastic art of the brain gives birth to a statue
capable of self-repair. We know full well that the functioning of the brain can be disturbed by numerous pathological causes, the best-known being cranial trauma, strokes, encephalitis, and neurodegenerative disorders (Parkinson’s, Alzheimer’s). But the nervous system always demonstrates plasticity after such handicaps or lesions, whether or not these efforts are crowned with success: the affected structures or functions try to modify themselves so as to compensate for the new deficit or form a new and abnormal organizational schema that restores normalcy.

Reparative plasticity obviously does not make up for every deficit; we know that certain neuronal lesions are irreversible. But at the beginning, in the brain, there is always a more or less successful, more or less efficacious, more or less durable attempt to reorganize the affected function. Jeannerod takes as an example the phenomenon of the paralysis of the left arm provoked by a lesion on the right side of the motor region of the cortex following a stroke. At the start, all movement is impossible; the arm is immobile and flaccid. After a certain period, the muscular force returns, and elbow and wrist movements reappear. How is this possible if the neurons responsible for controlling these movements have been destroyed? . . . Functional neural imaging is very useful here: it shows us that during the patient’s efforts to move the paralyzed arm, the left side of the motor region of the cortex, spared by the lesion, is activated. The patient, by himself or through rehabilitation, has learned to use nerve pathways that would not be there in the normal state. This reorganization of motor function testifies once more to the plasticity of brain mechanisms.78

Another example is what happens at the onset of Alzheimer’s disease. The encroaching amnesia is compensated for in part by a capacity to recuperate stored information. The deactivation of certain regions (the region of the hippocampus) is balanced by a metabolic activation of other regions (the frontal regions). Thus after certain circuits are affected, there is a modification in strategies for handling information, a modification that again attests to the functional plasticity of the brain.79

There are, therefore, functions for postlesional reorganization. These phenomena can also be observed in certain transplants. In January 2000, a team from Edouard Herriot Hospital in Lyon performed the first human double hand transplant on Denis Chatelier, thirty-three years old, whose hands had been amputated four years earlier following an accidental explosion. The question was: Even if one manages to re-establish a precise anatomical continuity between the donor’s hands and the recipient’s forearms, can one attain the same continuity on the psychological and neurological level? The Chatelier case showed that one can. His phantom pains disappeared, and the motor progress he made allows us to assert that his brain succeeded in integrating his transplanted hands. “When the motor cortex reorganizes itself, the synapses modify themselves. They change their relative influence, their ‘weight’ in the local functioning of the network of neurons . . . After the transplant, such a change in neuronal connections could come to restore the representation of the hand.”79 Yet more proof of our brain’s striking capacity for adaptation.

Are We Free to Be High Performing?

We can see it now: there are not just one but many plasticities of cerebral functioning. The interaction of these plastic modalities sketches an organization that does not at all correspond to traditional representations of the brain as a machine without autonomy, without suppleness, without...
becoming—representations that today have become true "epistemological obstacles." It is urgent that we affirm, against these representations, which no longer represent anything at all, that our brain is in part essentially what we do with it. Individual experience opens up, in the program itself, a dimension usually taken to be the very antithesis of the notion of a program: the historical dimension. Plasticity, between determinism and freedom, designates all the types of transformation deployed between the closed meaning of plasticity (the definitive character of form) and its open meaning (the malleability of form). It does this to such a degree that cerebral systems today appear as self-sculpted structures that, without being elastic or polymorphic, still tolerate constant self-rewriting, differences in destiny, and the fashioning of a singular identity.

The question that inevitably poses itself is thus: How can we know how to respond in a plastic manner to the plasticity of the brain? If the brain is the biological organ determined to make supple its own biological determinations, if the brain is in some way a self-cultivating organ, which culture would correspond to it, which culture could no longer be a culture of biological determinism, could no longer be, in other words, a culture against nature? Which culture is the culture of neuronal liberation? Which world? Which society?

The concept of plasticity has an aesthetic dimension (sculpture, malleability), just as much as an ethical one (solicitude, treatment, help, repair, rescue) and a political one (responsibility in the double movement of the receiving and the giving of form). It is therefore inevitable that at the horizon of the objective descriptions of brain plasticity stand questions concerning social life and being together. To expedite matters, let us reduce these to one option: Does brain plasticity, taken as a model, allow us to think a multiplicity of interactions in which the participants exercise transformative effects on one another through the demands of recognition, of non-domination, and of liberty? Or must we claim, on the contrary, that, between determinism and polyvalence, brain plasticity constitutes the biological justification of a type of economic, political, and social organization in which all that matters is the result of action as such: efficacy, adaptability—unfailing flexibility?
The New Wounded

From Neurosis to Brain Damage

Catherine Malabou

Translated by Steven Miller

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She must think I’ve forgotten her since she died, how alone and abandoned she must feel! Oh! I must run and see her this very minute, I can’t wait for my father to come, but where is it? How can I have forgotten the address? If only she still recognizes me! How can I have forgotten her all these months? It’s dark, I won’t find her, the wind is stopping me from advancing; but here is my father walking in front of me; I cry out to him: “Where’s Grandmother? Tell me the address. Is she all right? Is it quite certain she’s got all she needs?” “No, no,” my father says to me, “you can rest assured. Her nurse is an orderly person. We send her a very small sum from time to time so they can buy her the little she has need of. She sometimes asks what’s become of you. She’s even been told that you were going to write a book. She seemed pleased. She wiped away a tear.”

— MARCEL PROUST, Sodom and Gomorrah

There are two personal experiences at the origin of the present work. In the first place, this book is a belated reaction to the ordeal of depersonalization to which my grandmother was subjected as Alzheimer’s disease operated upon her. I say “operated” because it seemed to me that my grandmother, or, at least, the new and ultimate version of her, was the work of the disease, its opus, its own sculpture. Indeed, this was not a diminished person in front of me, the same woman weaker than she used to be, lessened, spoiled. No, this was a stranger who didn’t recognize me, who didn’t recognize herself because she had undoubtedly never met her before. Behind the familiar halo of hair, the tone of her voice, the blue of her eyes: the absolutely uncontestable presence of someone else. This other person, however, was strangely absent. My grandmother no longer cared about anything anymore; she was
Introduction

The distinction between diseases of "brain" and "mind," between "neurological" problems and "psychological" or "psychiatric ones," is an unfortunate cultural inheritance that permeates society and medicine. It reflects a basic ignorance of the relation between brain and mind.

—Antonio Damasio, Descartes' Error: Emotion, Reason, and the Human Brain

Cerebrality and Sexuality: Cause and Event

I will allow myself to invent one word and only one: cerebrality. My hope is that such a barbarism will come to be accepted as the mark of a concept.

Why introduce this word? It is necessary in order to construct the analogy around which my entire discussion will revolve.

FROM SEX TO SEXUALITY

Freud, as we know, distinguishes between two related ways of understanding "sexuality." The everyday understanding of sexuality supposes that it consists of a set of sexual practices and behaviors. The concept or scientific understanding of "sexuality," however, upholds it as a law—that is, a specific form of causality. Such a concept would thus function as a regulative apparatus designed to organize the phenomenal dispersion implied in the everyday understanding of sexuality.
Introduction

For Freud, the ability to elucidate how this apparatus works and to establish the causal value of sexuality within the domain of mental illness—especially the neuroses—constitutes a decisive advance and will become one of the bases of psychoanalysis. To elucidate the “sexual etiology of the neuroses” is not to say that sexual problems, in the first sense, directly impinge upon the psyche—as if the latter were already constituted and incurred such lesions from the outside; it is, on the contrary, to underscore the necessary relation between such problems and the nature of psychic life itself.

Psychoanalysis does not only study “noxae that affect the sexual function itself,” but also elucidates what destines or predestines these disturbances to become the styles whereby the internal course of psychic life is inscribed. Psychoanalysis, then, is a matter of aligning the sexual etiology of the neuroses with a theory of events.

According to scientific understanding, therefore, sexuality appears as the concept that determines the sense of the event within psychic life.

FROM THE BRAIN TO CEREBRALITY

In the same way that Freud upheld the distinction between “sex” and “sexuality,” it has become necessary today to postulate a distinction between “brain” and “cerebrality.” If the brain designates the set of “cerebral functions,” cerebrality would be the specific word for the causal value of the damage inflicted upon these functions—that is, upon their capacity to determine the course of psychic life. The recognition of cerebrality, then, implies the elucidation of the specific historicity whereby the cerebral event coincides with the psychic event. Such recognition makes possible a cerebral etiology of psychic disturbances.

If it is necessary to elaborate the concept of cerebrality today, it is because, insidiously but unmistakably, cerebrality has usurped the place of sexuality in psychopathological discourse and practice. Accordingly, this substitution is one of the basic reasons for the conflictual relation between psychoanalysis and neurology. The main purpose of my discussion will be to clarify the meaning of this substitution.

LOVE AND THE BRAIN

Although there are numerous signs that cerebrality has replaced sexuality, the relation between them has yet to be clearly articulated. All we have is the vague ideological supposition that the “brain” governs “sex.” This substitution is thus expressed by recourse to the vulgar notion of an “erotic brain” at the root of all our pleasures, emotions, and suffering.

Innumerable articles—published both in specialized journals and popular magazines—posit the brain as the organ behind “sexual chemistry.” Such developments suggest that the hypothesis of a specific sexual drive endowed with its own psychic representation has been ousted by the idea of cerebral sensibility or sexuality. All affects begin as neuronal or hormonal processes that have different effects but derive from the same source. The libido thus gives way to the vaguer notion of “appetite,” of which it would be merely one species. Accordingly, Mark Solms can declare: “Where Freud used the sexual term ‘libido’ to denote the mental function activated by our bodily needs of all kinds, modern neurobiologists speak of ‘appetites.’”

The libido—in weak sense of sexual desire or pleasure—would be merely one manifestation among others of a neuronal dynamic. The idea that the sexual would be autonomous with respect to the cerebral is thereby demoted: sex is located in the brain as one of its phenomena. As Jean-Didier Vincent puts it: “Desire is in the head.”

The brain has also been described as the origin of the phenomena of addiction. Advances in the knowledge of neurotransmission have made it possible to provide a detailed analysis of the processes of dependency. Whether it be drugs, alcohol, or medications—in particular, tranquilizers and antidepressants—the conclusions are the same: The habit-forming effects of these substances are due to the facilitation or inhibition of certain neurotransmitters.

According to research of this type, the brain is the origin of all of our attachments. Such an affirmation does not amount to an “intellectualization” of desire but, on the contrary, proves that cerebral organization presides over a libidinal economy whose laws have just begun to be explored. Hence, a radical affirmation: Today, obscurely yet certainly, the brain appears as the privileged site of the constitution of affects.

EMOTIONS AND THE BRAIN

Elaborating the concept of “cerebrality” makes it possible to unify the various discourses on the brain that, even if they converge upon the same idea, remain nebulous.
What is the source of the prevalent intuition that the brain and affects are inseparable from one another? This intuition undoubtedly constitutes the naïve interpretation of what neurologists have recently called "the emotional brain." The study of emotional processes in the brain has become an increasingly important area of research within neurology that insists upon the indissoluble link between neuronal metabolism and the dynamic of emotion. Accordingly, "dynamic of emotion" does not merely refer to a system that governs a certain type of sensation but rather to a thoroughgoing redefinition of the logic of the drive.

Cerebral activity goes well beyond the mere work of cognition, and even of consciousness, to encompass the affective, sensory, and erotic fabric without which neither cognition nor consciousness would exist. For this reason, brain lesions of any kind always result in both cognitive and emotional disturbances: affective or libidinal deficits, disruption of habits, the tragic loss of life skills. Cognitive and emotional damage: We may now presume that the one never occurs without the other.

How, then, might we forge a consequential and rigorous connection between the "erotization of the brain," the diffuse notion that haunts popular opinion, and the primordial importance that scientists grant to emotions within cerebral organization? The best way to respond to this question would be to examine the consequences of damage to the emotional centers of the brain. According to the available evidence, however, the type of event that interferes with cerebral affects does not fall under the jurisdiction of sexuality; it cannot be equated with "harm inflicted upon the sexual function." Brain damage constitutes a psychic event of a different nature than what Freud called a "sexual event."

The concept of cerebrality would thus make it possible to determine, much like the Freudian concept of "sexuality," both a cause and a regime of events. Sexuality and cerebrality appear today as concurrent economies of the psyche's exposure to wounding.

**WHAT IS A PSYCHIC EVENT?**

But what is the fundamental distinction between a "psychic event," understood in terms of sexual etiology, and a "psychic event," understood in terms of cerebral etiology—the distinction that establishes the different that separates psychoanalysis and neurology? What is the difference between what happens according to the one etiology and what happens according to the other?

For Freud, as we will show at length in the second part of this book, a "psychic event" always has two sides—an "exogenous" side and an "endogenous" side. Every event implies an unexpected occurrence, an element of surprise. This is the exogenous aspect of the event. The endogenous aspect, then, comprises the way in which the psyche elaborates this exteriority in order to integrate it into the history of the subject. Sexuality (in both of its senses, "empirical" and "transcendental," as it were) thus appears to Freud as the privileged site of an encounter between the exogenous and the endogenous, or, more precisely, as the privileged site of the encounter and connection between an incident and a signification. Paul Ricoeur remarks quite correctly, that the essence of psychoanalytic discourse lies in the determination of each event as an intersection between the "energetic" and the "hermeneutic," as the connection between "nonsense" and "sense."

The course and regime of events governed by cerebrality is completely different. Brain damage is itself an event that, insofar as it affects the psychic identity of the subject, reveals a certain connection between the exogenous and the endogenous. But this connection is distinguished by the fact that no interpretation of it is possible. In the case of a brain lesion, for example, the external character of the accident remains external to the psyche itself. It remains exterior to the interior. It is constitutively insassimilable.

The accidents of cerebrality are wounds that cut the thread of history, place history outside itself, suspend its course, and remain hermeneutically "irrecoverable" even though the psyche remains alive. The cerebral accident thus reveals the ability of the subject to survive the senselessness of its own accidents.

**THE FREUDIAN REJECTION OF A CEREBRAL PSYCHE**

It is precisely this psychic survival of the cerebral accident that Freud never accepted. One could even say that his elucidation of sexuality became possible only thanks to a neutralization of cerebrality. In his early work, Freud is indeed interested in the inscription of the event within the psyche, which, from *Project for a Scientific Psychology* onward, he elaborates as the question of "facilitation" (Bambung). However, the brain will very quickly become for
Freud an opaque organ that is resistant to such questioning. An organ and an organization exposed to damage from the outside, to wounds, to lesions, to trauma, the brain remains incapable of treating the endogenous effects of such inflowing excitation. The brain is not the place where its own events are constituted. Upon this point, Freud will never waver.

This is why I decided not to rely upon Freud’s neurological studies, but rather to consider his later, properly psychoanalytic texts, in which he gradually elaborates, in an ever more resolute farewell to neurology, a new way of thinking the psychopathological event.

The word “trauma” in Greek means “wound” and derives from τρόμος, which means “to pierce.” Trauma thus designates the wound that results from an effraction—an “effraction” that can be physical (a “patent” wound) or psychical.7 In either case, trauma names a shock that forces open or pierces a protective barrier. However, in order to understand Freud’s approach to the psychic event, one must bear in mind two fundamental postulates of the properly psychoanalytic concept of trauma: (1) The incidence of an organic lesion is incompatible with the development of a neurosis and (2) There is a distinction between the “determining” cause and the “efficient” cause of psychic trouble.

In a passage from Beyond the Pleasure Principle devoted to traumatic neurosis, Freud affirms: “In the case of ordinary traumatic neuroses two characteristics emerge prominently: first, that the chief weight in their causation seems to rest upon the factor of surprise, of fright; and secondly, that a wound or injury inflicted simultaneously works as a rule against the development of a neurosis.”8 When Freud wrote these lines, he was thinking primarily of cerebral lesions. Indeed, this text reprises the assertion, from “Introduction to Psychoanalysis and the War-Neuroses” (1919), that “the disorders that appear after frightening experiences are not neuroses.”9 Head wounds, functional and motor disturbances, paralyses, tremors, loss of memory, and disabilities that result from “tangible organic injuries to the nervous system” do not, as such, have any impact upon the psyche. In order to constitute psychic events in their own right, such traumas must reanimate a conflict unrelated to war in which they happen to occur: an affective conflict. Accordingly, for Freud, the true cause of the war neuroses is, in reality, a “peacetime conflict.”10 This conflict is originally a conflict between the ego and the sexual drives: “Neuroses,” Freud writes, “arise from a conflict between the ego and the sexual drives which it repudiates.”11

The “sexual etiology of the neuroses,” therefore, is only valid in cases of “traumatic neurosis” that, ultimately, cannot be truly or substantially distinguished from disturbances that result from brain lesions.

The argument is circular. Either brain lesions and other types of shock cannot be reduced to sexual disturbances, which means that patients’ suffering is not considered to be psychic suffering and that they are disqualified for psychoanalytic treatment, or the aftereffects of trauma can be translated into the language of endogenous events, which means that trauma victims become common neurotics.

The distinction between “efficient cause” (Ursachen) and “determining cause”—or, more precisely, a cause that “possesses the relevant suitability to act as a determinant” (die betreffende determinierende Eigenschaft) also functions to ground such an argument. This distinction, which Freud posited quite early (“The Aetiology of Hysteria,” dating from 1896), allowed him to show that shocks or external events constitute only secondary factors whose damage does nothing in reality but “trigger” or “activate” the endogenous causes—the true, sexual causes—of a given disturbance.

Freud clearly underscores the need to recognize two types of factors at the origin of neurosis: constitutional factors and accidental factors. Nonetheless, when it comes to evaluating the “part played by sexuality in the etiology of the neuroses,” he admits that he “ceased to lay exaggerated stress upon the accidental influencing of sexuality” (unzweckmäßige Beeinflussung der Sexualität).12 He also underscores the fact that if damage from outside and trauma do play a role in the etiology of the neuroses, they can only “cause secondary damage” to the psyche. Although Freud was a thinker of the event, could it be that he was not a true thinker of the accident?

We must examine this point as soberly as possible. This, of course, is not to deny that Freud took external peril and threats to life into account, that he drew a distinction between fear, anxiety, and fright—the latter being the affect proper to trauma, “the state a person gets into when he has run into danger without being prepared for it.”13 He gave a perfect definition of trauma as an influx of excitation that overpowers the metabolic capacity of the psychic apparatus. He acknowledges the status of “severe mechanical concussions . . . railway disasters or other accidents involving risk to life” or “the terrible war which has just ended.”14 In the final analysis, however, sexuality, understood as a specific causality and regime of events, will always
triumph over the brute accident, the pure effraction, the wound without hermeneutic future.

Did not Freud ultimately concede the point himself? *There is no beyond of the pleasure principle.*

The “development of the concept of sexuality” makes it possible to affirm the eventual autonomy (autonomie éventuelle) of a process that, without entirely separating itself from the nervous system, constitutes itself as an extraterritorial site where the psychic signification of accidents integral to individual history is elaborated. Examining how Freud’s path from neurology to psychoanalysis led him to change the meaning of “nervousness”—from nervous to neurotic—makes it possible to appreciate the distance that existed for him between “sexual assaults” and “organic lesions” or “unexpected shocks.”

For Freud, a wound such as a brain lesion is, unto itself, psychically mute. The lips of the wound must be closed to allow the “other mouth” to speak. Victims of brain lesions must be recognized as “people who are crippled in sexuality.”

### The New Wounded

Contemporary neuropathology increasingly resists such “recognition.” There are psychic accidents that cannot be translated into the language of sexual infirmity.

Cerebrality would thus designate another manner of arrogating contingency than in terms of sexuality. Although it also entails a certain intertwining of the exogenous and the endogenous, cerebrality does not allow an interpretation of the lesion or the trauma that aligns it with a “previous conflict.” Neither does it accept the preeminence granted to the “internal enemy.” The concept of cerebrality allows for the possibility of a disastrous event that plays no role in an affective conflict supposed to precede it. Accordingly, it determines the survival of the psyche in terms of a perfectly and definitively aleatory traumatic effraction.

The sick and the traumatized people of whom I will speak in these pages have all “fallen ill” in the sense that they have been exposed to an accident, a turn of events that strikes them down in a wholly unexpected fashion. Even if they have suffered from this brutal turn as long as they can remember, if they have always been sick or will be sick forever, this does not change the fact that, in every case, the wound, permanent infirmity, or sudden lesion manifests the same *absence of sense.*

These patients, each in his or her own way, challenge us to think pure, senseless danger as an unexpected event—*incompatible with the possibility of being fantasized.* One does not fantasize a brain injury; one cannot even represent it. Cerebrality is thus the causality of a neutral and destructive accident—without reason. We know that it does not take much—a few vascular ruptures, minimal in terms of their size and scope—to alter identity, sometimes irreversibly. We know it, but the psyche cannot stage this knowledge for itself.

The impossibility of such psychic staging has psychic repercussions in itself. The psyche does indeed live, endure, and suffer from the damage caused by the “pure” accident. This damage disturbs the cerebral economy of the affects that hold together body and mind, thought and sensibility, cognition and sensuality.

The destruction of everything that attaches the subject to himself and to others—auto-affection, desire, love, hatred, pleasure—can either take an instant or the longer span of degenerative brain disease, but, in either case, the event is blind to the hermeneutic dimension. Contrary to what Freud affirms, sexuality is always exposed to a more radical regime of events: the shock and the contingency of the ruptures that sever neuronal connections.

### Who Are They? Profiles

The appellation “new wounded,” therefore, designates people who suffer from psychic wounds that traditional psychoanalysis cannot understand—that is to say, understand and thus consider as relevant to its jurisdiction.

The presence of the new wounded constitutes both a return to the past and an emergent phenomenon. The “new wounded” are also the “old” wounded, people whose pathologies have long been identified. Freud the neurologist knew them on sight. At the same time, these pathologies are “new” to the extent that we are beginning today to appreciate not only their organic but also their psychic effects. Herein lies the new phenomenon: From now on, people with brain lesions will form an integral part of the psychopathological landscape.
Who are they? They are, as the term indicates, victims of various cerebral lesions or attacks, head trauma, tumors, encephalitis, or meningoencephalitis. Patients with degenerative brain diseases such as Parkinson’s or Alzheimer’s also fall into this category. In addition, we might think of the patients whom psychoanalysis has attempted to cure without success: schizophrenics, autistics, epileptics, victims of Tourette’s syndrome.

The “new wounded” constitute an emergent phenomenon, then, to the extent that this category also refers to subjects who suffer from disturbances that had yet to be identified during Freud’s time. For example, one might adduce several recently discovered disorders: obsessive-compulsive disturbances, hyperactivity syndrome with attention deficit disorder, or any of the illnesses identified by the “disabilities movement.”

All such people—victims of accidental lesions or chronic ill—suffer, no matter their disparate clinical profiles, from emotional disturbances that essentially consist in the malfunctioning of affective signals necessary to make decisions. To differing degrees, they all display permanent or temporary behaviors of indifference or disaffection.

TOWARD A GENERAL THEORY OF TRAUMA

The “new wounded,” however, are not merely people with brain lesions. We should recall that cerebrality designates a regime of eventuality that recognizes the psychical weight of accidents stripped of any signification. I thus authorize myself also to extend the category of “new wounded” to cover every patient in a state of shock who, without having suffered brain lesions, has seen his or her neuronal organization and psychic equilibrium permanently changed by trauma. Such patients also suffer, in particular, from an emotional deficit.

The approach of contemporary neuropathology makes it possible to elaborate a legitimate model for understanding the structure of every type of psychic trauma. The “lesion method,” to borrow one of Damasio’s formulations, is thus capable of showing that both subjects with brain lesions and those who have suffered types of trauma not linked to cerebral pathology present identical behaviors. The behavior of subjects who are victims of trauma linked to mistreatment, war, terrorist attacks, captivity, or sexual abuse display striking resemblances with subjects who have suffered brain damage. It is possible to name these traumas “sociopolitical traumas.”

Under this generic term, one should group all damage caused by extreme relational violence. Today, however, the border that separates organic trauma and sociopolitical trauma is increasingly porous.

This affirmation tends to generalize and enlarge the concept of brain damage opening it to types of harm that do not initially pertain to neuropathology. It is thus necessary to show that all trauma impacts neuronal organization, particularly the sites of emotional inducers. This is precisely the point that makes it possible to construct a paradigm for all the “new” wounded. In addition, this affirmation makes it possible to understand neuronal disturbance in other terms than pure and simple physiological lesions.

Of course, in neuropathological cases, neuronal changes are the cause of psychic disorganization, whereas they are the consequence of psychic disorganization in cases of sociopolitical trauma. Nonetheless, in all of these situations, the same impact of the event is at work, the same economy of the accident, the same relation between the psyche and catastrophe.

Not all traumas, lesional or sociopolitical, are always fortuitous, and there is never a simple relation between the “normal” interior of the psyche and the violent eruption of an unpredictable exterior. Sociopolitical trauma never occurs entirely by chance. Every event always derives, in one way or another, from an indivisible intimacy between the outside and the inside. Nonetheless, today, traumatic events appear more and more clearly as events that tend to mask their intentionality, taking two, apparently contradictory, forms: they appear either as perfectly unmotivated accidents or as the necessary blindness of natural laws. In both cases, the intentional orientation of the event is disguised or absent.

The victims of neuropathological trauma thus display a strange phenomenon that constitutes a structural trait of all posttraumatic behavior. Effacing the limits that separate “neurobiology” from “sociopathy,” brain damage tends also to blur the boundaries between history and nature; and, at the same time, it reveals the fact that political oppression, today, itself assumes the guise of a traumatic blow stripped of all justification.

NEUROPSYCHOANALYSIS

Beyond the controversies and discussions about the efficacy or scientificity of psychoanalysis that currently divide the field of psychopathology, we
should, instead, devote our attention to the change in the concepts of event, wound, and trauma.

This gesture does not entail taking sides against Freud. On the contrary, I will undertake a reading of Freud that will turn upon the elaboration of the notion of the psychic event. In order to facilitate a confrontation between Freudian thinking and the contemporary neurological thinking of the event, I will follow the path opened by the disciplinary formation of neuropsychoanalysis.

Born in the United States from the work of neurologist and psychoanalyst Mark Solms, this discipline presents itself as a novel synthesis of the neurological and psychoanalytic approaches to mental disturbances. A relatively recent development, having only emerged at the beginning of the 1990s, neuropsychoanalysis, as its name indicates, is a bridge concept, a hyphen, between neurology and psychoanalysis.

The neuropsychoanalysts belong to the new generation of researchers who have contested the pure and simple rejection of psychoanalysis, which, since the 1950s, has been common currency among theoreticians of the brain. The scientists who work under the banner of neuropsychoanalysis uphold the necessity of returning to Freud without thereby eschewing the principle of the cerebral etiology of mental disturbances. In their view, Freud is no longer a traitor to neurology but, on the contrary, the figure who laid the groundwork for the completion of its work by outlining within the field of psychoanalysis a series of investigations and results that would be confirmed by the neurology of the future. This is the theory of the moment of transition.

In his book, The Brain and the Inner World, Solms cites the famous passage from Beyond the Pleasure Principle in which Freud declares: “Biology is truly the land of unlimited possibilities. We may expect it to give us the most surprising information and we cannot guess what answers it will return in a few dozen years . . . . They may be of a kind which will blow away the whole of our artificial structure of hypotheses.” Solms refers to this passage in order to affirm that “it is not a matter of proving that Freud was right, but of finishing his work,” thereby framing that psychoanalysis took no more than a provisional distance from neurology as it waited for neurologists to accept and respond to the hypothesis of the unconscious.

According to the theory of the moment of transition, psychoanalysis would only be an episode—a sort of necessary interruption—in the long history of neurology, an episode that would mediate between the classical neurology that Freud the medical student would have learned and practiced it and the present state of the psychobiological science of neurons. “The reason [that Freud abandoned neurology],” Oliver Sacks writes, “was the very inadequate state of neurological (and physiological) understanding at the time, not any turning against neurological explanation in principle.” Further: “Freud knew that any attempt to bring together psychoanalysis and neurology would be premature (although he made a last attempt at this in his 1895 ‘Project,’ which he left unpublished in his lifetime).”

If this moment of transition is now complete, the project of conjoining psychoanalysis and neurology has yet to be accomplished. To integrate psychoanalysis within the history of neurology is at once to insist on the need to renew, or even reform, certain aspects of psychoanalytic theory in light of neurological findings and, inversely, to recognize what a neurology that has entered the era of subtlety owes to Freud.

The concept of neuropsychoanalysis, as Sacks explains once again, initially derived from the encounter between psychoanalysis and neuropsychology—hence the name depth neuropsychology—that Mark Solms sometimes uses for the discipline. It was the great Soviet psychologist Alexander Luria, who, advancing the work of his master, Lev Vygotsky, founded neuropsychology in the 1930s. Luria proposed to replace the notion of cerebral function with the concept of functional system. While the function is anatomically located in an air, the functional systems suppose dynamic interactions between different neuronal mechanisms. These systems are characterized, in particular, by the ability to reorganize their elements; and this means that a lesion does not merely affect a single place in the neuronal organization but transforms the linkages or interactions between the systems. Brain lesions always have a dynamic localization.

It was in this way, Oliver Sacks declares, that neurology itself had to evolve, from a mechanical science that thought in terms of fixed functions and centers, a sort of successor to phrenology, through much more sophisticated clinical approaches and deeper understandings, to a more dynamic analysis of neurological difficulties in terms of functional systems, often distributed widely through the brain and in continual interaction with each other. Such an approach was pioneered by A. R. Luria in the Soviet Union. But neuropsychology, as this approach came to be called, only got going
power to change the personality of the patient. But psychoanalysis and neurology each endow this change with a profoundly different sense.

PSYCHOANALYSIS AND NEUROLOGY DO NOT ENTAIL THE SAME IDEA OF CHANGE

What does this mean? To describe phenomena linked to the transformation of identity, Freud uses the word *Lehveränderungen*—“alterations of the ego” or “modifications of the ego.” Profound as they may be, such “alterations” or “modifications” never entail an absolute rupture with the patient's foregoing personality. Changes caused by brain lesions, however, frequently manifest themselves as an *unprecedented metamorphosis* of the patient's identity. “Unprecedented,” in such cases, signifies “without any relation to the subject’s past”: the wound gives rise to a new person, precisely, to one of the new wounded. A person with Alzheimer's disease, for example, is not—or not only—someone who has “changed” or been “modified,” but rather a subject who has become someone else.

All lesions that impact the cerebral mechanisms for producing and regulating emotions (particularly in the prefrontal cortex, the hippocampus, and the amygdala) can alter the personality to such a degree that it becomes unrecognizable without necessarily diminishing the higher cognitive functions (language, memory, attention, and so on). This alteration manifests itself especially in the “odd unconcern” that seems to come over the new wounded, as if they had been separated from themselves.

This “change in personality” thus designates such a disruption of identity that it, or the wound that causes it, constitutes a bright dividing line between “before” and “after.” Such radical change corresponds to the definition of catastrophe proposed by the psychiatrist and psychoanalyst François Leboyer, a specialist in emergency situations: “Catastrophe defines the event as it asserts itself on the psychic level; that is, it represents a localizable and most often brutal external fact that, for the subject, causes a rupture which introduces a very radical division between before and after.”

PHINEAS GAGE

The paradigmatic example of such change, cited in many neurological studies, is that of Phineas Gage. A railroad construction foreman in Vermont
power to change the personality of the patient. But psychoanalysis and neurology each endow this change with a profoundly different sense.

PSYCHOANALYSIS AND NEUROLOGY DO NOT ENTAIL THE SAME IDEA OF CHANGE

What does this mean? To describe phenomena linked to the transformation of identity, Freud uses the word *Ideeänderungen*—"alterations of the ego" or "modifications of the ego."27 Profound as they may be, such "alterations" or "modifications" never entail an absolute rupture with the patient's foregoing personality. Changes caused by brain lesions, however, frequently manifest themselves as an *unprecedented metamorphosis* of the patient's identity. "Unprecedented," in such cases, signifies "without any relation to the subject's past": the wound gives rise to a *new person*, precisely, to one of the new wounded. A person with Alzheimer's disease, for example, is not—or not only—someone who has "changed" or been "modified," but rather a *subject who has become someone else*.

All lesions that impact the cerebral mechanisms for producing and regulating emotions (particularly in the prefrontal cortex, the hippocampus and the amygdala) can alter the personality to such a degree that it becomes unrecognizable without necessarily diminishing the higher cognitive functions (language, memory, attention, and so on). This alteration manifests itself especially in the "odd uncoupling"28 that seems to come over the new wounded, as if they had been separated from themselves.

This "change in personality" thus designates such a disruption of identity that it, or the wound that causes it, constitutes a bright dividing line between "before" and "after." Such radical change corresponds to the definition of catastrophe proposed by the psychiatrist and psychoanalyst François Lebígor, a specialist in emergency situations: "Catastrophe defines the event as it asserts itself on the psychic level; that is, it represents a localizable and most often brutal external fact that, for the subject, causes a rupture which introduces a very radical division between before and after."27

PHINEAS GAGE

The paradigmatic example of such change, cited in many neurological studies, is that of Phineas Gage.29 A railroad construction foreman in Vermont
at the end of the nineteenth century, Phineas Gage was directing a rock-blasting operation when the accident happened. He triggered an explosion as he was compacting a charge in a rock formation with a long iron rod. The force of the blast drove the rod all the way through his skull.

Miraculously, he survived the accident, but his frontal lobe was gravely damaged. Gage became both irritable and indifferent to everything. Having lost any feelings for his friends and family, he seemed utterly disaffected. Damasio writes, "Phineas Gage will be pronounced cured in less than two months. Yet this astonishing outcome pales in comparison with the extraordinary turn that Gage's personality is about to undergo. Gage's disposition, his likes and dislikes, his dreams and aspirations are all to change. Gage's body may be alive and well, but there is a new spirit animating it." And later: "Gage was no longer Gage."

Because this metamorphosis was a metamorphosis of being in its entirety rather than a mere loss of aptitude, it is not possible to separate the organic wound from its psychic repercussions. Mark Solms, who claims to have treated "hundreds of Phineas Gages," affirms: "Today we know, from observing countless similar cases, that damage to that area of tissue almost always produces the very same type of personality change that it did in Gage's case." Indeed, "there is a predictable relation between specific brain events and specific aspects of who we are. If any one of us were to suffer the same lesion in that specific area, we would be changed in much the same way that Gage was, and we, too, would no longer be our former selves. This is the basis of our view that anyone with a serious interest in the inner life of the mind should also be interested in the brain, and vice versa."

THE "AGONIZING QUESTION OF DISAFFECTION"
AND THE POSTTRAUMATIC CONDITION

The reason for this "interest" resides in the psychic capacity for metamorphosis at work in cases of brain damage. What is the origin of this capacity? Why does it raise the "agonizing question of disaffection" that accompanies trauma? Why is disaffection the most common posttraumatic symptom? Françoise Davoine and Jean-Max Gaudilliére, psychoanalysts who are open to neurological problems, affirm that their "clinical work brings us into contact with many of Phineas Gage's descendants, as it were—people whose cortex was not necessarily mutilated but whose emotions were nevertheless disrupted and anesthetized, leading to horrific decisions." Behavioral disaffection responds to the cruel indifference of the forces that cause trauma. Destructive metamorphosis is the effect that responds to the implacable and senseless character of the cause.

The new wounded, people with brain lesions, have replaced the possessed or the madmen of ancient medicine and the neurasthenics of psychoanalysis. The specter of such phenomena hints at the scope of a posttraumatic condition that reigns everywhere today and demands to be thought.

PLASTICITY AND DESTRUCTION

These remarks bring me to my third main idea: the apparition of a new face of plasticity.

To recognize the determining causal value of the wound is to take into account its plastic power upon the psyche. The term "plasticity," one should recall, has three principal significations. On one hand, it designates the capacity of certain materials, such as clay or plaster, to receive form. On the other hand, it designates the power to give form—the power of a sculptor or a plastic surgeon. But, finally, it also refers to the possibility of the deflation or explosion of every form—as when one speaks of "plastique," "plastic explosive," or, in French, plastiquage (which simply means "bombing"). The notion of plasticity is thus situated at both extremes of the creation and destruction of form.

Which of these three senses should one retain to characterize the plastic power of the wound upon the psyche? Certainly, this power is the power to create form, in the sense that it brings about a metamorphosis of identity. And this identity is itself plastic to the extent that it is susceptible to being imprinted by this new form. Nonetheless, 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.

Such plasticity—and herein resides its paradox—ultimately remains an adventure of form. What patients with Alzheimer's disease show us, to take
this example once again, is precisely the plasticity of the wound through which the permanent dislocation of one identity forms another identity—an identity that is neither the sublation nor the compensatory replica of the old form, but rather, literally, a form of destruction. Such patients prove that destruction is a form that forms, that destruction might indeed constitute a form of psychic life. The formative-destructive power of the wound, as we are attempting to think it now, may thus be articulated in this way: All suffering is formative of the identity that endures it.

How, then, does the theme of destructive plasticity orient the critical confrontation between psychoanalysis and neurology that I am now undertaking? To begin with, it must be acknowledged that neither Freud nor the neurologists have elaborated the concept. In psychoanalysis and in neurology, plasticity is a powerful operative category, but it is only ever understood in terms of its first two senses: reception and donation of form. The third sense—that of deflagration—is ignored. Neurological reflection upon the determining power of the wound and trauma is certainly a reflection upon the change in identity that destroys this same identity. But this reflection lacks a concept that would make it possible to define the meaning of this change and to grasp the psyche in terms of its capacity to survive after the wound—not as absence of form but as the form of its absence. If the category of plasticity does play a role in both psychoanalysis and neurology, it gives no more than a hint of its own negativity.

On Freudian Plasticity. What does this mean? In Freud, “plasticity” mainly designates two essential phenomena: on one hand, the vitality of the libido, its capacity to change its object and to resist fixation; and on the other hand, the indestructible character of psychic life. Within the psyche, nothing is forgotten; traces have an indestructible character. Imprints can be modified, deformed, and reformed—but they persist. A very beautiful passage from “Thoughts for the Times on War and Death” elaborates this sense of plasticity:

The development of the mind shows a peculiarity which is present in no other developmental process... Here one can describe the state of affairs, which has nothing to compare with it, only by saying that in this case every earlier stage of development persists alongside the later stage which has arisen from it; here succession also involves co-existence, although it is to the same materials that the whole series of transformations has applied. The earlier mental state may not have manifested itself for years, but nonetheless it is so far present that it may at any time again become the mode of expression of the forces in the mind, and indeed the only one, as though all later developments had been annulled or undone. This extraordinary plasticity (dieser außerordentliche Plastizität) of mental developments is not unrestricted as regards direction... But the primitive stages can always be re-established; the primitive mind is, in the fullest meaning of the word, imperishable. This “extraordinary plasticity of psychic developments” thus designates the character of what resists destruction and forgetting, albeit at the price of regression. Plasticity displaces without annihilating. Indestructibility is the rule in psychic life and the norm of psychopathology. “What are called mental diseases,” Freud writes, “inevitably produce an impression in the layman that intellectual and mental life have been exposed to destruction (Zerstörung). In reality, the destruction only applies to later acquisitions and developments. The essence of mental disease lies in a return to earlier states of affective life and of functioning.”

However, the study of the contemporary neurology of brain wounds and traumas raises fundamental questions: Can we be sure that psychic life resists destruction? Can we be sure that there is something indestructible about the psyche? Can we be sure that the set of “endogenous events” that constitute sexuality, in the scientific sense, resist attacks coming from outside, do not succumb to explosion or annihilation? Can we be sure, finally, that we can still consider “mental illness” as a “return to earlier states”?

The hypothesis of destructive psychic plasticity, therefore, calls into question the idea of the continuity of personality in pathology. It is entirely possible that there will be no relation between the identity that comes before a lesion or trauma and the identity that comes after, that, once again, the new identity will be unprecedented. Coolness, to come back to it, is certainly the most convincing argument in favor of such a metamorphosis. Damasio writes about one of his patients: “[His] emotional life seemed impoverished. Now and then he might have a short-lived burst of emotion, but for the most part such display was lacking. There is no sign that he felt for others, and no sign of embarrassment, sadness, or anguish at such a tragic turn of events. His overall affect is best captured as ‘shallow.’”

On Neurological Plasticity. Nonetheless, when neurologists speak of a person becoming unrecognizable, even if they invoke the archetypical figure
of the cold-blooded killer, they do not truly theorize this negative plasticity. Between the traumatic effraction and the response of identity to this effraction, there remains a space of psychic elaboration—a space that is never explored as such even though it constitutes the veritable site for a fruitful engagement with psychoanalysis.

The neurological concept of plasticity itself also remains attached to the positive values of neuronal construction and configuration, of the creation of a style of being. The two types of cerebral plasticity, constructive and destructive, are never related to each other. Both cases, however, entail an elaboration of form. How can these two plasticities coexist?

All of these questions are questions that I address in this book. It has often been objected to me, in spite of my reiterated insistence upon the three senses of plasticity—reception, donation, and annihilation of form—that, ultimately, I myself privilege the first two (creative) senses over the final (negative) sense; that I merely evoke destructive plasticity without ever concretely envisaging it; that I only ever deal with it allusively; that I only ever explore the creative dimensions of plasticity: invention, suppleness, resistance, the ability to oppose flexibility. It is true that in the final analysis, I have never made the senselessness of form or the annihilation of sense in form into the thematic focus of my work. Never have I truly confronted the possibility of destructive metamorphosis.

This is the book in which I would like to go “a step farther,” to explore the hypothesis of a truly explosive plasticity and to stop inscribing deformation within the project of sublating form.

Thus it is in this direction, as unknown to me as to psychoanalysis and neurology, that I would like to open a dialogue, developing the idea of a plasticity that would be nothing other than a form of death.

The plasies of death: How should one think this idea? This is perhaps the most difficult problem, the most vulnerable in my work, because it must be situated between the Freudian hypothesis of the death drive—which infinitely complicates the problem of sexuality—and the contemporary neurological hypothesis of a death of the drive.
SELF and Emotional Life

Philosophy, Psychoanalysis, and Neuroscience

Adrian Johnston | Catherine Malabou
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The brain’s exposure to accidents directly involves its plasticity. Under the term *neural plasticity* hides, in fact, two plasticities. One is positive: it characterizes the formation process of neural connections and the fact that these connections may be transformed during our lifetimes under the influence of experience and of the kind of life we are leading. Every brain has its own form and there is no such thing as two identical brains. So, in the case of the healthy plastic brain, every kind of event is integrated into the general form or pattern of the connections, and the series of events of our lives constitute the autobiographical self. There exists a second kind of plasticity, however, which refers to brain damage and its destructive power. This negative plastic power consists in the transformation of the patient’s previous personality and in the emergence of a new individual proceeding from the explosion of the former identity. We see clearly here that plasticity appears as an accurate balance between the ability to change and the resistance to change.

Damasio states that “the circuits are not only receptive to the results of first experience, but repeatedly pliable and modifiable by continued experience.”¹ This “good” plasticity, so to speak, can be interrupted by what neurobiologists call “disconnection.” A lesion that occurs in a brain region “does more than gashing a hole in this region. It removes this region from the whole brain organization. . . . Cerebral lesions are always disconnections.”²
Why should we call the destructive work of disconnection plastic? Isn't plasticity an inappropriate name here? To answer this issue, I refer to the famous case of Phineas Gage, which is related by Damasio in Descartes' Error and by Mark Solms in The Brain and the Inner World:

In the 1840s, an unfortunate man by the name of Phineas Gage was laying railways tracks in the midwestern United States. He was pressing down a charge of dynamite into a rock formation, using a tamping rod, when the charge suddenly exploded. This caused the tamping rod to shoot through his head, from underneath his cheekbone into the frontal lobe of his brain and out through the top of his skull. Partly because the rod passed through so rapidly, probably cauterizing the tissue on its way, the damage to Gage's brain was not very widespread; only a relatively small area of frontal tissue was affected. . . . Gage did not even lose consciousness, and he made a rapid physical recovery. His physician, however, reported some interesting changes when he published the case in a local medical journal a few years after the incident. Dr Harlow noted that, despite the good physical recovery and the relatively small extent of the brain injury, his patient was radically changed as a person; his personality was changed. . . . Let's read a passage from Doctor Harlow's report: "he is fitful, irreverent, indulging at times in the grossest profanity (which was not previously his custom), manifesting but little deference for his fellows. . . . In this regard his mind was radically changed, so decidedly that his friends and acquaintances said that he was 'no longer Gage.'"

Let's focus on the statement that "his mind was radically changed." The specific operation of such a "radical" change cannot be of the same type as the one fulfilled by the plastic power of experience upon neural connections. Why not? First of all, a brain lesion interrupts all kinds of experience. The events that cause the pathological "radical change" are purely contingent, external, and totally unanticipated. They cannot be assimilated or interiorized by the psyche or by the brain. Second, the sort of transformation that occurs in such cases is not a partial modification but a complete metamorphosis of the personality. In Gage's case, there is no existential phantom limb phenomenon. The previous personality is totally lost and there is no remainder. Of course, some aspects of this personality are preserved: language, cognition, and reasoning. These faculties are strangely intact. But the emotional brain has been badly injured and this causes a dramatic change. Even if some capacities remain untouched, the patient is unrecognizable. Such a
transformation may nevertheless be said to be plastic in the sense that it forms and sculpts a new identity.

The two plasticities are two different kinds of relationships between events and affects. When brain damage occurs, it interrupts the economy of our affects. Solms declares: “In our clinical work as neuropsychologists we have met hundreds of Phineas Gages, all with damage to the same part of the brain. This is a fact of obvious importance for anyone with an interest in personality. It suggests that there is a predictable relationship between specific brain events and specific aspects of who we are. If any one of us were to suffer the same lesion in that specific area, we would be changed in much the same way that Gage was, and we, too, would no longer be our former selves. This is the basis of our view that anyone with a serious interest in the inner life of the mind should also be interested in the brain and vice versa.”

The destructive plasticity forms what it destroys. It is not a simple annihilation or suppression to the precise extent that it has a result. This result is the formation of "someone else," a new self, a self that is not able to recognize itself. The accident appears to be the plastic explosion that erases any trace and every memory, and that destroys any archive. And yet, such a damaged mind is still alive. It is a kind of survival that absolutely renounces the possibility of redemption or salvation.

The event of the brain damage occurs without presenting itself and forever stays out of access, out of interiorization, remaining exterior to any “becoming-subject.” Destructive plasticity is a biological deconstruction of subjectivity. All the questions Derrida raises under the name of heteroaffection—the impossibility of a presentation of the self to itself, of the I to itself, the impossibility of regarding the event as an accident belonging to the subject—all these questions seem to coincide precisely with the problems that are addressed in the neurobiological redrawing of the self.

The Loss of Affects

Brain damage is also a theoretical accident that happens to the very idea of the accident in its traditional definition. All the cases of brain damage that Damasio exposes are cases of absent subjectivity. Such a subjectivity is absent to itself and to its essence as well as to its accidents—a subjectivity without affects, the extreme form of heteroaffection.

The “survivors of neurological disease,” as Damasio calls them in The Feeling of What Happens, lead a life that is sometimes almost totally destroyed in
its temporality and its structure. All these survivors share something in com-
mon: they all endure a profound change of personality caused by this destruc-
tion: “Prior to the onset of their brain damage, the individuals . . . affected had
shown no such impairments. Family and friends could sense a ‘before’ and an
‘after,’ dating to the time of neurologic injury.”6 The loss of the previous self
almost always leads the patients to indifference, coldness, and a lack of concern,
“a marked alteration of the ability to experience feelings.”7

All the cases that Damasio examines show this characteristic, which he
calls “disaffectation” and, sometimes, “cold blood.” One of the first examples
of this phenomenon is exposed in Descartes’ Error, in chapter 3, “A Modern
Phineas Gage.” This modern Phineas Gage is named Elliot. He was suffering
from a brain tumor that had to be removed. “The surgery was a success in every
respect, and insofar as such tumors tend not to grow again, the outlook was
excellent. What was to prove less felicitous was the turn in Elliot’s personal-
ity. The changes, which began during his physical recovery, astonished family
and friends. To be sure, Elliot’s smarts and his ability to move about and use
language were unscathed. In many ways however, Elliot was no longer Elliot.”8

Damasio continues:

Bit by bit the picture of this disaffectation came together, partly from my
observations, partly from the patient’s own account, partly from the testimony
of his relatives. Elliot . . . seemed to approach life on the same neutral note.
I never saw a tinge of emotion in my many hours of conversation with him:
no sadness, no impatience, no frustration with my incessant and repetitious
questioning. I learned that his behaviour was the same in his own daily envi-
nronment. He tended not to display anger, and on the rare occasions when he
did, the outburst was swift; in no time he would be his usual self again, calm
and without grudges.

This was astounding. Try to imagine it. Try to imagine not feeling pleasure
when you contemplate a painting you love or hear a favorite piece of music.
Try to imagine yourself forever robbed of that possibility and yet aware of the
intellectual contents of the visual or musical stimulus, and also aware that once
it did give you pleasure. We might summarize Elliot’s predicament as to know
but not to feel?

The mechanism of mapping seems to be separated from all emotional pro-
cesses. The attachment of the self to itself, or concern, does not take place any
longer. There is no possible healing of such a disaffectation: “Elliot seemed
beyond redemption, like the repeat offender who professes sincere repentance but commits another offense shortly after."

Another case is that of "L": "The stroke suffered by this patient, which I will call L., produced damage to the internal and upper regions of the frontal lobe in both hemispheres. An area known as the cingulate cortex was damaged, along with nearby regions. She had suddenly become motionless and speechless. . . . The term neutral helps convey the equanimity of her expression, but once you concentrated on her eyes, the word vacuous gets closer to the mark. She was there but not there. . . . Again, emotion was missing."

A third example is even more serious and concerns cases of anosognosia (from the Greek nosos, "disease," and gnosis, "knowledge"). Anosognosia denotes the inability to recognize a state of disease in one's own organism: "No less dramatic than their oblivion that anosognosic patients have regarding their sick limbs is the lack of concern they show for their overall situation, the lack of emotion they exhibit, the lack of feeling they report when questioned about it. The news that there was a major stroke . . . is usually received with equanimity, sometimes with gallows humor, but never with anguish or sadness, tears or anger, despair or panic."

Anosognosia is a lack of perception of damage. It is also known as Anton's Syndrome. Anton was an Austrian physician living at the end of the nineteenth century. In a talk he gave to the Society of Physicians of Austria, he described these patients as "soul-blind for their own blindness." Anton's Syndrome is the inability to make a certain functional loss available for conscious experience. The patients who suffer from this syndrome lose any ability to wonder about anything. The feeling of wonder itself has disappeared from both their body and their mind. This disappearance is a total one, not a partial loss. In what case is the deconstruction of autoaffection the more radical: when wonder proceeds from heteroaffection, or when affects are definitely impaired? Do we have to think of a heteroaffected subject or of a nonaffected subject to complete or accomplish the deconstitution of traditional subjectivity?

Freud and the Event

Freud wouldn't agree to consider that an emotion or an affect may totally disappear. In the psyche, he says, "nothing that has once come into existence will have passed away." This capacity to preserve the past is precisely called plasticity. Freud compares the psyche to the city of Rome, in which every strata of the
past is still present: every memory is still alive in the psyche. He insists upon the impossibility of total oblivion in psychic life. Every memory is thus like a monument.

In the development of the mind, says Freud in "Thoughts for the Times on War and Death,"

every earlier stage persists alongside the later stage which has arisen from it; here succession also involves co-existence, although it is to the same materials that the whole series of transformations has applied. The earlier mental stage may not have manifested itself for years, but none the less it is so far present that it may at any time again become the mode of expression of the forces in the mind, and indeed the only one, as though all later developments had been annulled or undone. This extraordinary plasticity of mental developments is not unrestricted as regards directions; it may be described as a special capacity for involution—for regression—since it may well happen that a later and higher state of development, once abandoned, cannot be reached again. But the primitive stages can always be re-established; the primitive mind is, in the fullest meaning of the word, imperishable.

What are called mental diseases inevitably produce an impression in the layman that intellectual and mental life have been destroyed. In reality, the destruction only applies to later acquisitions and developments. The essence of mental disease lies in a return to earlier states of affective life and functioning. An excellent example of the plasticity of mental life is afforded by the state of sleep, which is our goal every night. Since we have learnt to interpret even absurd and confused dreams, we know that whenever we go to sleep we throw out our hard-won morality like a garment, and put it on again next morning. 14

We clearly see that Freud only stresses the positive meaning of plasticity. Plastic means imperishable, resilient, possessing the ability to cure or to heal. The metaphor of the city of Rome shows that psychic space, thought in reference to architectural extension, is always capable of exhibiting its memory and overcoming wounds and loss. The psyche can be both extended and positively plastic or indestructible.

Neurobiology puts this so-called psychic immortality into question. The formation of a "new" identity after a brain lesion shows that the primitive psyche is not imperishable, as Freud states; it can be damaged without any return to a previous state. The patients are not allowed to regress or to seek shelter in their own history or their own past.
The value of Freud’s “excellent example of the plasticity of mental life” (i.e., dreams) seems to be put into question by some kinds of brain damage that destroy the very process of dreaming. Mark Solms shows that damage caused to sites specializing in mental imagery provokes a disturbance in the ability to dream: “If the patient loses the ability to generate a mental image, the inability to dream seems a logical consequence.”

Three areas are involved in the process of imagery. When these areas are affected, visual experiences cease. For example, these patients lose the ability to perceive color or movement, or they lose the ability to recognize specific objects or faces. What are the effects of these lesions on dreaming? “Damage to the primary visual cortex, Zone 1, has (perhaps surprisingly) no effect on dreaming at all. Although these patients cannot see in waking life, they see perfectly well in their dreams. Damage to the middle zone of the system, Zone 2, causes exactly the same deficits in dreams as it does in waking perception: these patients continue to dream in various sense modalities, especially somatosensory and auditory, but their visual dream imagery is deficient in specific respects. For example they no longer dream in color, or they dream in static images (loss of visual movement), or they cannot recognize any of the faces in their dreams. Damage to the higher zone, Zone 3, on the other hand, produces complete loss of dreaming.”

What does the Freudian definition of the plasticity of mental life mean to people who have lost their ability to dream, to people who cannot see what they are dreaming of? In what sense is their sleep a return to a previous state? What is there to find? These patients indeed do have a psychic life. We must ask ourselves what this kind of psychic life means when there is no return, no regression, no attachment to the past, and no detachment from the past either.

A neurological accident is hopeless, unpredictable, and never consumable, an accident that cannot be integrated by the psyche, that cannot make sense for it, that cannot form a moment of a personal history. This is a purely destructive event, which provokes the total disappearance of a psychic formation, or of a brain region, or of affects, particularly wonder.
Neurological Objection: Rehabilitating the Event

Psychotherapeutic experience on the battlefield gave birth to a renewal of the paradigm of psychoanalysis itself.

—FRANCOISE DAVOINE AND JEAN-MAX GAUDILLIERE, History Beyond Trauma

All those who “saw themselves dead” are psychically traumatized. It is not only a matter of the “imaginative” apprehension of death, but the sudden and inaugural perception of “one’s own death” as something imminent and unavoidable: the revelation of something mysterious, grave, and definitive that has no meaning except perhaps as an introduction into nothingness:

—LOUIS CROCQ, Les traumatismes psychiques de guerre

Psychological trauma is an affliction of the powerless. At the moment of trauma, the victim is rendered helpless by overwhelming force. When the force is that of nature, we speak of disasters. When the force is that of other human beings, we speak of atrocities. Traumatic events overwhelm the ordinary systems of care that give people a sense of control, connection, and meaning.

—JUDITH LEWIS HERMAN, Trauma and Recovery

At the end of August 1914, a Lieutenant Kauders was wounded near Lublin by Russian gunfire. On September 9, nine days after being wounded, he was diagnosed with a skull fracture. Kauders had trouble walking, the two sides of his body fell out of unison, his vision was impaired, and he suffered from affective disturbances and apathy. The Arbitration Commission declared him an invalid and sent him home to Berlin.

Later, in 1917, probably because officers were hard to come by, his classification as an “invalid” was reevaluated. That autumn, Kauders appeared once again before the military commission, which ordered him to report to Vienna. To his great astonishment, he was sent to Garrison Hospital No. 1 and placed in a room like a prison cell with iron bars. His neighbor, a Turkish officer who was clearly mentally ill, screamed all through the night. The following day, Kauders was taken by ambulance to the Wagner-Jauregg clinic, where he remained in an isolation room for seventy-seven days. The deplorable hygienic conditions and the brutality of the guards were nothing in comparison to the sessions of faradization, which Wagner-Jauregg implemented himself. A metallic brush charged with electric current was applied to sensitive parts of his body such as the testicles and the tips of the toes while an audience shouted at him: “Miserable malingerer!” “You’re in for it!” The pain was intolerable: “On treatment with a strong electric current, the patient begins to weep loudly and lament with pain.” “I was quite intentionally exposed to torture,” Kauders claims in his report.

At no moment did the psychiatrists accept the diagnosis of brain damage, and so they focused their efforts on using electricity to make the patient confess to malingered. Unable to extract such a confession, they ended up discharging Kauders with the diagnosis of “traumatic hysteria.” Eissler comments: “I have referred to all the medical findings and reports. . . . Their gist is this: The greatest German neurologist and an important Viennese specialist in internal medicine were sure, or nearly sure, that Kauders had suffered an organic injury to the cerebrum. Wagner-Jauregg was sure that Kauders was a malingerer.”

The neurological diagnosis was thus fallaciously transformed into a psychiatric diagnosis. Nonetheless, detailed examination of the expert neurological reports shows that, if Kauders was not the victim of serious damage to the central nervous system, he did suffer from a hematoma that formed after a skull fracture. Eissler asserts:

It was already known at that time that the absence of external injury by no means excluded internal damage. As early as 1895 Strümpell expressed himself unambiguously about the matter: “Even after relatively slighter wounds (caused by thrusts, blows and the like) we can rarely dispute the possibility of resulting hemorrhages, either in the meninges and the surface of the brain or in the deeper part of the brain” . . . Sanger wrote (1915): “After grenade explosions, even where there is no external injury, peculiar disturbances occur, the cause of which needs further investigation (meningeal hemorrhage and the like)” . . . Bonhoeffer (1917) wrote: “The anatomical findings of multiple clinical
hemorrhages in the brain, which we meet in brain-tissue specimens after
grenade explosions without external injury... leaves no room for doubt that
this type of organic damage (by air pressure in grenade explosions) can occur."

One wonders, then, why neither Wagner-Jauregg, the military doctor, nor
Freud, during his expert testimony, did not recognize the internal wound
and did not want to admit that Kauder's troubles, in particular the loss of
feeling in his body, resulted from a subdural hematoma. Neither the diag-
nosis of malingering nor that of a withdrawal of libidinal cathexis after a
shock could account for Kauder's physical and psychic suffering. Eissler has
already said it: only a dual approach, both neurological and psychoanalytic—a
prefiguration of neuroanalysis—could help this man.

How could Freud remain so blind to this point? And what theoretical
or clinical conclusions should we draw from the contemporary neurological
reexamination of traumatic neuroses in general and war neuroses in
particular?

Freud's "Abandonment" of the Concept of Traumatic Neurosis

As his thought develops, Freud abandons both the theory of the traumatic
origin of neuroses and the theory of specific psychic disturbances that follow
from traumatic neuroses. In the same way that the role of "accidental in-
fluences" become relativized in the texts devoted to the formation of infantile
sexual life, the causal power of traumatic events, such as wars or accidents,
finds itself systematically subordinated to the more originary legality of the
"libido theory." The more that Freud takes such events into account and
examines them in their own right, it would seem, the less he endows them
with etiological value.

Nonetheless, the article entitled "Traumatic Neurosis," from The Lan-
guage of Psychoanalysis, concludes:

It may thus be seen how psychoanalytic investigation throws the concept of
traumatic neurosis into question: it contests the decisive function of the
traumatic event—first by stressing its relativity vis-à-vis the subject's tolerance,
and secondly by inserting the traumatic experience into the context of the
subject's particular history and organization.... The notion of traumatic
neurosis appears as nothing more than an initial, purely descriptive approxima-
tion which cannot survive any deeper analysis of the factors in question.

It would even be possible to say that, for Freud, traumatic neurosis, in the
strict sense of a psychic disorder caused by piercing or effraction, does not
exist.

In this regard, an assertion from Beyond the Pleasure Principle is emble-
matic: "At this point I propose to abandon the dark and dismal theme [dunkel-
dünstere Thema] of the traumatic neuroses." In "Introduction to Psychoanalysis
and the War Neuroses," Freud already claimed that war neuroses were des-
tined to disappear with the armed conflicts that caused them. The Fifth
Psychoanalytic Congress concluded with the resolution to establish psy-
choanalytic centers "at which analytically trained physicians would have
leisure and opportunity for studying the nature of these puzzling disorders
and the therapeutic effect exercised on them by psychoanalysis." But, Freud
continues,

Before these proposals could be put into effect, the war came to an end,
the state organizations collapsed and interest in the war neuroses gave
place to other concerns. It is, however, a significant fact that, when war
conditions caused to operate, the greater number of neurotic disturbances
brought about by the war simultaneously vanished. The opportunity for a
thorough investigation of these affections was thus unluckily lost—though,
we must add, the early recurrence of such an opportunity is not a thing to be
desired.

It is thus evident that Freud abandons the problem. From his early texts on
hysteria to Beyond the Pleasure Principle or Civilization and Its Discontent, by
way of the texts specifically devoted to anxiety, it seems that Freud is less
concerned with clarifying his thinking of the event than with the sexual
etiology of the event. The latter becomes more and more differentiated, to
the point that its causal structure develops two heads united in a single theory—
the "libido theory." This structure, both bifid and unified, is then imposed,
between life and death, as an incontestable principle of explanation.

Freud's position on the question of the accident remains, from one end
of his work to the other, fundamentally the same. These lines from New
Introductory Lectures on Psychoanalysis encapsulate this position: "We ask our-
sewes what it is that is actually feared in a situation of danger of this kind. It
is plainly not the injury to the subject as judged objectively, for this need be
of no significance psychologically, but something brought about by it in the
mind." The problem is always that of the internal enemy or the enemy
interior. But the question of a proper body that becomes an enemy through
the effect of an improper foreign body—bullet, shell, explosion—is never
truly envisaged.

Accordingly, Eric Porge's analyses, in his remarkable introduction to
Eissler's book, remain quite debatable, for they claim that Beyond the Pleasure
Principle offers a radically new theory of trauma that will finally push Freud
to break with the doctrines of his students: "All the efforts of Freud's stu-
dents were devoted to showing that the same principles were at work in the
war neuroses and in the neuroses of peacetime: it was important that war
neuroses should confirm the doctrine of the conflict between the ego and
the libido." Freud would thus literally invert this perspective. Porge con-
tinues: "Certainly, in writing that the war neuroses are analogous to the
transference neuroses ... Freud authorizes an approach that begins with
the old principles." But, in Beyond the Pleasure Principle, "far from retract-
ing the word trauma ... Freud actually returns to it and lends it a new
dimension." The inversion is thus formulated in the following terms:
Freud "abandons" the theory of sexual character in order to affirm the
traumatic character of the sexual: "At the end of a long trajectory, Freud once
again comes up against the traumatic character of the sexual. Such is the
inversion that he accomplishes. Recognizing trauma as a 'source of sexual
excitation,' Freud turns toward a sexual origin other than that of the 'conflict
between the ego and the sexual drives that it represses.'"

This analysis is not false—except that, in its own terms, what Freud
redefines is sexuality, not trauma. The two characteristics of sexuality that
Porge quite rightly distinguishes participate not in a redefinition of trauma
but rather in the redefinition of instinctual dualism, or the libido theory.
The sexual is what changes sense, not trauma. The structure of the event, tra-
umatic or not, remains the same.

New Baptisms: Posttraumatic Stress

War psychiatry has also abandoned the categories of "traumatic neurosis"
and "war neurosis." But the reasons for this abandonment are obviously not
at all the same as Freud's. The extreme gravity of psychic disturbances
caused by war meant that it would no longer be pertinent to characterize them in terms of "neurosis." As opposed to what Freud claims, the tra-
umatic illnesses occasioned by war do not disappear after the war is over.

On the contrary, they become so much more complex and severe that the
concept of neurosis can no longer account for them. Indeed, as the military
psychiatrist Louis Crocq has remarked in Les traumatismes psychiques de
guerre, psychiatry has successfully called into question the subordination of
wound and trauma to narcissism—that is, the subordination of the lesion to
certain types of libidinal investment. The screen that separates the organic
wound and the constitution of a neurosis or psychic disturbance has been
lifted.

We now know, Crocq asserts, that Freud's claim that wounds prevent the
onset of neurosis is not true. Certainly, he continues, "the fact of having a
somatic wound does not necessarily cause a traumatic neurosis," but "it
does not protect against its onset." It also untrue, therefore, that war
neuroses disappeared after the end of the First World War. There have obvi-
ously been further wars and thus further war neuroses; but, more important,
psychopathology has become increasingly preoccupied with the wounds
that these wars left behind. This is so much the case, Crocq writes, that "the
question arises once again whether it might in fact be trauma that brings
about obsessions, rituals, and compulsions of destiny, or whether these
characteristics are the traits of a subject who is obsessional beforehand and
compromised in advance by intrusive thoughts and behavior."4

THE WORK OF ABRAM KARDINER

If the concept of "traumatic war neurosis" has fallen out of use, it is because
it became necessary for military psychiatrists to propose a new clinical
category that would do justice to brutal shock, to the impact of the event in
the psychic constitution of trauma. It was the American psychoanalyst
Abram Kardiner, a former patient of Freud, who was the first to put
war psychiatry on the path toward the decisive changes that led to abandon-
ment of the concept of traumatic neurosis in favor of posttraumatic stress
disorder.

When he returned to New York after his Viennese psychoanalysis,
Kardiner worked both in his own analytic practice and at the veterans' clinic,
where he studied numerous cases of war neurosis. At first, he
attempted to develop a new theory of the war neuroses within the frame-
work of classic psychoanalysis; but he abandoned these efforts and, out of
disappointment, turned for a time to anthropology. It was only in 1941
that he returned to the problem of the war neuroses and established his new thinking in his fundamental work *The Traumatic Neuroses of War*, revised in 1947 in collaboration with Herbert Spiegel.16

Kardiner, who first proposed the concept of "traumatic neuroses of war," developed the idea that war traumas impact the "effective ego" rather than the "affective ego" of the soldier.17 The mechanisms of defense at work in "peacetime" neuroses are not required, as Freud had asserted, by disturbances linked to traumatic neuroses because the latter derive from emergency measures on the part of the "effective ego." The "effective ego" designates the secret part of the psychic organization charged with eliminating aggressive stimuli through the alteration of adaptation. Its principal functions are "perception (including meaning and use, voluntary motion, orientation, memory, inhibition, and repression)."18 Traumatic experience occurs when the effective ego finds itself out of action. Under such conditions, its only recourse is to repress itself. This results in the phenomenon of "constriction" that manifests itself as affective withdrawal.

Kardiner developed the hypothesis of an "overwhelming" of the psyche that manifests itself through four decisive neuropsychological symptoms: "changes in the perception of the external world, changes in the techniques of adaptation, changes in self-perception, and changes in neurovegetative life."19 It is the concept of suddenness that emerges within the analysis of these disorders and that determines the specificity of traumatic experience. Accordingly, a therapy of emergency must, from then on, respond to the unforeseen character of the trauma.

**THOMAS SALMON AND THE PSYCHIATRY OF EMERGENCY**

The American psychiatrist Thomas Salmon, sent to Europe on a mission to observe the phenomena of the war neuroses before the Americans entered the conflict on April 2, 1917, already developed the idea of a therapy of immediacy, now known under the name of forward psychiatry. "Forward" should be understood to mean "up at the front." Salmon noted, in fact, "that soldiers treated near the battlefield, close enough to hear the sound of cannon fire, recovered more quickly than if they had been treated in the rear."20 In his report, entitled *The Care and Treatment of Mental Diseases and War Neuroses (Shell Shock) in the British Army*, published in New York in 1917, Salmon insists on the dangers linked to length of time it took to evacuate and repatriate traumatized soldiers because such a delay would give these soldiers time to consolidate their morbid mentality.21

Salmon developed the idea of creating hospitals close to the front where doctors would work shoulder to shoulder, which would constitute true emergency therapeutic support. These hospitals prefigure the present-day emergency medical cells that are set up in disaster zones (terrorist attacks, explosions, fires, accidents), where they use debriefing techniques to treat traumatic experience.22

Salmon articulated five principles of emergency therapy: Proximity, Immediacy, Expectancy, Simplicity, and Centrality. Proximity entails keeping the soldier for a time within the atmosphere of the front. Immediacy responds to the need to prevent the development of a traumatic neurosis. Expectancy implies that the patient must be convinced that he will get better. Simplicity entails rejecting the use of over-complicated equipment or technical apparatuses: *simple* offices, clean but rustic, must suffice; and the treatment itself, founded upon "persuasive suggestion," must also be simple. Finally, centrality suggests that the medical organization must be centralized, fanning outward from the foremost centers to the remost annexes, annexes where the most serious cases, often patients without hope of survival, would be transferred.

**THE POSTTRAUMATIC STRESS DISORDER DIAGNOSIS AND ITS GRADUAL ENLARGEMENT**

In civilian life, it took a long time for specific symptoms linked to the traumatic experience of war to gain widespread recognition. Many soldiers complained that their suffering was not recognized when they returned from war. Accordingly, it was only in 1980 that that concept of posttraumatic stress disorder (PTSD) appeared for the first time, when it figured in the DSM-III as a category designed primarily to characterize the mental state of Vietnam War veterans. It was thus long after the war itself that the symptoms caused by the war were identified and recognized.

The clinical profile of PTSD comprises: (1) exposure to a stress-inducing event that causes distress in a subject; (2) reminiscences of the event (dreams or obsessive memories); (3) psychic exhaustion manifesting itself as loss of interest in habitual activities, a tendency to detach oneself from others, and a constriction of affect (coolness or indifference); (4) a disparate set of
symptoms, such as loss of memory, state of alert, problems sleeping, survivor's guilt, and the aggravation of these symptoms when the patient is exposed to stimuli that recall the trauma. Ruth Leys writes:

Post-traumatic stress disorder is fundamentally a disorder of memory. The idea is that, owing to the emotions of terror and surprise caused by certain events, the mind is split or dissociated; it is unable to register the wound to the psyche because the ordinary mechanisms of awareness and cognition are destroyed. It quickly became apparent that this clinical picture did not only apply to disorders linked to war, but that it could also easily pertain to any type of trauma. It thus became necessary to extend PTSD to cases beyond the old cases of “war neuroses,” even if, once again, official recognition of this necessity took time. Louis Crocq writes, “As such clinical findings mounted and as clinicians gained more and more experience with PTSD in accident or disaster victims, the DSM commission twice modified the diagnostic criteria for PTSD: first in 1987, in the DSM-III-R, and then in 1994, in the DSM-IV.” Accordingly, “in the most recent version (from 1994), the criteria of the traumatic event (criteria A) now requires that the event be experienced in the mode of fear, impotence, and horror; and the criteria of reminiscence (criteria B) now requires distress.” It thus took fourteen years, between 1980 and 1994, to recognize the link between the traumatic factor and the experience of fear, impotence, or horror provoked by an objective event that may not have to do with war.

The threat of death, wounding, suffering, torture, violence, the spectacle of another’s death or suffering, the sight of material destruction (houses, villages) are now officially part of “traumatic etiologies.” In her book, Trauma and Recovery, Judith Lewis Herman asserts, “A psychological trauma is an affliction of the powerless. … Traumatic reactions occur when action is of no avail. When neither resistance nor escape is possible, the human system of self-defense becomes overwhelmed and disorganized.” In the history of the PTSD diagnosis, therefore, it is possible to measure the profound displacement of the concept of traumatic neurosis as psychoanalysis had defined it. Not only does this diagnostic criteria make it possible more precisely to identify the psychic disturbances of war, it also calls into question, if not dismantles, the very link between neurosis and trauma. The impotence linked to traumatic shock can no longer be returned to the native “helplessness” of the subject. No “internal conflict” can be invoked. The “soldering” that joins Erlebnis and Ereignis is no longer possible. The psychic past no longer functions as resource for the present. The past is no longer the reason for trauma. PTSD allows for the existence of events that, unto themselves, are their own origin, and that, by virtue of their specific power, occasion a new psychic life. These events are precisely traumatic events.

Rehabilitating the Event

THE NEUROTIC IMPOSTURE

From one version of posttraumatic stress disorder to another—both the diagnosis in military contexts and its enlarged application to situations of grave danger in civilian life—what is at stake is a radical redefinition of traumatic etiology. This redefinition revolves around the imperative, which Louis Crocq formulates, to “rehabilitate the event”: “In matters of traumatic psychopathology, we must guard against the temptation to fall back upon predisposition, or even predestination. … It is time to rehabilitate the event—its destructive, overwhelming, and disorganizing power.” This “rehabilitation of the event” transforms the Freudian conception of the “soldering” event. Certainly, a traumatic accident can indeed reawaken or reactivate an “old event” and thereby an internal conflict. But today psychiatrists and neuropsychiatrists insist upon the unexpected and irreducible character of the traumatic event, which, even if it recalls past trauma, cannot do so without profoundly modifying the vision and content of the past itself.

By virtue of its pathological force of deformation and its destructive plasticity, in fact, such an event introduces an inauthenticity, a facticity within psychic life. It creates another history, a past that does not exist and, in this sense, constitutes a “neurotic imposture.” It is not only the behavior of the hysteric that mimics cerebral pathology; cerebral pathology itself is also capable of miming neurosis.

The notion of neurotic imposture, or the invasion of the personality by an overwhelming event, and then by its pseudo-memory that has become foreign and exclusionary, is well suited from a phenomenological perspective to account for the experiences of foreignness, depersonalization, dispossession, and xenopathy—that is, of alienation—to which patients have testified. … It is an entire experience of constricted and inauthentic being-in-the-world, with its
infiltration into the present, its obstruction of the future, and even its reorganization of the past, all of which constitute the unfortunate destiny of the traumatized neurotic.31

TRAUMATIC METAMORPHOSIS

The specificity of the traumatic event thus inheres in its metamorphic power. The traumatic event, in a certain sense, invents its subject. The past of the traumatized individual changes, becomes another past when it is not pure and simply destroyed or consigned to oblivion. Accordingly, a new subject enters the scene in order to assume this past that never took place. It is no longer the same subject who anticipates himself and sees himself die. Separation can no longer be anticipated but it does occur, precisely, in metamorphosis.

Croq insists on the “lasting modification of the personality that follows an experience of catastrophe,” a modification that leads him to propose the concept of the “traumato-neurotic personality.”32 Further: “The personalities of today’s neuroses are ‘constitutional’. . . . the traumato-neurotic personality is not constituted through trauma, at any age. It is what becomes of the personality of the patient under the impact of trauma.”33

This modification of the identity of patients is a long-established fact of observation. Simmel already spoke of a “change in the soul” and an “entombment of the person” under the effect of the accident.34 But the psychoanalytic model, “even as it accounts for the effraction and its overwhelming effect on the personality, does not postulate that this personality has been changed.”35 If Freud admits the obvious fact that an accident can severely and permanently damage the psyche, he never presents the formation of the new identity as a discontinuous process, a leap, a phenomenon that is no less unforeseen or unexpected than the catastrophe itself. For him, traumas and wounds do not seem capable of creating ex nihilo a posttraumatic identity. There is always a certain psychic continuity between what comes before and what comes after the wound; the subject remains what he is within his very alienation. However, this very continuity is what will be called into question within contemporary neurological debate.

Indeed, from the neurological point of view, the hypothesis of absolute danger designates the risk of brutal and sudden disappearance of the trace resulting in the formation of an identity without origin and without memory; an identity, produced by destructive plasticity, that is not interested or only falsely interested in itself.

Rehabilitating the event is thus a matter of taking into account the discontinuity produced by the traumatizing event and of its destructive power to transform identity (“Gage was no longer Gage”).

If we ask patients about their experiences of these changes of personality, we observe that this is no metaphor. The patients find themselves really changed; they no longer recognize themselves as they were before. And this is not simply due to the fact that they are sad about having undergone a difficult event; it is, more profoundly, on the level of their entire way of living, that they come to realize that a new being is within them, a being whom they do not recognize.36

THE SUBORDINATION OF SEXUAL ETIOLOGY

The contemporary conception of the traumatic event has permanently disrupted the link between mechanical commotion and sexual excitation that was first established by Freud and subsequently consolidated by Fenichel. In his work, The Psychoanalytic Theory of the Neuroses, Fenichel accords much importance to the genital excitation that subsumes traumatic excitation. Many traumatized people, in fact, fear their own sexual excitation: “Some types of morbid fear of death when analyzed turn out to be fears of orgasm”37. Anxiety would emerge from a displacement of excitation from the genital domain to the neurovegetal domain. Fenichel even goes so far as to affirm that certain “traumatophiles” subjects “appear to seek out the traumatic situation unconsciously—although they dread it at the same time.”38 Such assertions lose their relevance when they come up against the clinical problems posed by subjects suffering from PTSD, which all revolve around a brutal intrusion from outside that escapes any anticipation and any encounter with an “inside” prepared to host the brutality of the effraction.

Sexuality loses its etiological value as a primary cause to the extent that the regime of events that it governs cannot or can no longer integrate the traumatic event—henceforth defined as “something that occurs one time, at a specific date and time, within a person’s history or that of a human society, the signification and consequences of which impinge upon everything else that has happened (and, sometimes, that will happen) during the rest of this history.”39 The DSM-III specifies that the trauma is a
"psychologically distressing event that is outside the range of usual human experience," going beyond merely painful or unpleasurable experiences (such as "simple bereavement, chronic illness, business losses, and marital conflict"). This "stressor" represents a serious threat to the life and physical integrity of the subject. It introduces a radical cut between the past and the present.

The impossibility of confusing traumatic factors and psychoneurotic factors has thus been established, which deprives sexuality of its etiological validity.

**Toward a General Theory of Trauma**

This redefinition of trauma transforms the entire field of psychopathology, not merely the field of war psychiatry.

In his commentary on the stunning film, *L'effroi des hommes* (Human Dread), directed by Jean-Bernard Andro, the military psychiatrist Claude Barrois opposes the Orpheus myth to the Oedipus myth. Traumato-neurotic personalities have returned from hell not from childhood. This film brings together the testimony of survivors in a chiasmus: the memory of hell and the hell of memory... Back from the land of the dead, the poet is no longer inclined to sing. Barrois shows that everything that war psychiatry has revealed about the subject of trauma not only applies to the victims of armed conflicts but also all subjects whose identity has been profoundly metamorphosed from the impact of a catastrophe.

Whatever their age, origin, profession, sex, or condition; whatever the circumstances of the trauma (attack, airplane hijacking, wars, accidents, natural disasters); whatever the degree of their exposure; with or without injuries; alone or lost in a crowd; on the domestic, national, or international scale, in their accounts these survivors sketch out a field of research that their symptoms are exploring.

The substitution of Orpheus in place of Oedipus, the substitution of a hell without memory in place of a purgatory of culpability pertains to all the new wounded whether or not they have returned from the field of battle.

Judith Lewis Herman also underscores that today's wars have manifestly blurred the distinction between military and civilian. The concept of war trauma has thus been extended to civilian victims. The psychic consequences of violence against women and children during military conflicts, the symptoms of captivity, the disorders suffered by hostages or victims of terrorism, and the stress experienced by peacekeepers or humanitarian personnel can all be understood in terms of this concept. It would even be necessary, in Herman's view, to enlarge the scope of posttraumatic stress disorder by renaming it complex posttraumatic stress disorder in order to designate a multiple and differentiated—one might even say, universal—state of stress.

The concept of PTSD should thus extend to *any and all cases of trauma*. As I affirmed at the beginning of this study, the catastrophic event is itself void of sense and traumatic experience is first and always an experience of the absence of sense. Moreover, it is striking to note that today's victims of sociopolitical traumas present the same profile as victims of natural catastrophes (tsunamis, earthquakes, floods) or grave accidents (serious domestic accidents, explosions, fires). We have entered a new age of political violence in which politics is defined by the renunciation of any hope of endowing violence with a political sense.

The meaning of armed conflicts, for example, is masked behind the impersonal and signatureless character of their attacks. Between a car bomb and an accidental detonation of a gas tank there is both an enormous difference and no difference. The sinister lesson of terrorism lies in its refusal to formulate a lesson. Responsibility for attacks is claimed less and less often. The situation in Iraq, for example, remains illegible: Who perpetrates terrorist attacks today, and why? The dissimulation of the reason for the event is the new form of the event. The increasingly radical effacement of the distinction between accident and crime, between disastrous incidents and war, the multiform presence of the absence of any responsible instance or author makes the natural catastrophe of contemporary politics into a daily occurrence.

The sheer number of these traumatic events tends to neutralize their intention, such that they assume the unmotivated character of the chance, uninterpretable event. *The enemy, today, is hermeneutics*. This is why it falls to neurology, psychoanalysis, and neuropsychology, starting from the redefinition of trauma, to produce the sense of this war on sense.

This effacement of sense, of course, does not only occur in countries at war; it is everywhere. It constitutes the new face of the social—bearing
witness to an emergent, *globalized* psychic pathology that is identical in all cases and all contexts. "Psychological trauma," Judith Lewis Herman declares, "is indeed a worldwide phenomenon.47

It is perhaps surprising that all these traumatic events should be placed on the same level. I might be reproached for forging a false "amalgam," or for following the method that Boris Cyrulnik elaborates in his book *Un merveilleux malheur* (A Marvelous Misfortune), where he applies the concept of trauma to victims of the Nazi concentration camps, Romanian orphans, abused children, children caught up in the horrors of the war in Mozambique, or famous accident victims. But what must be discussed today is precisely this phenomenon of the amalgam, the heterogeneous mixture of nature and politics at work in all types of violence, this mixture where politics is annulled as such so that it assumes the face of nature and where nature disappears beneath the mask of politics. This *globalized* heterogeneous mixture of nature and politics is brought to light by the worldwide uniformity of neuropsychological reactions.

The Etiological Triumph of Cerebralty

**THE NEW WOUNDED AND THE "PARADIGMATIC" STATUS OF BRAIN DAMAGE**

In the course of this analysis, I have attempted to make my way back to people with brain lesions and those traumatized by war; to people traumatized by war and war's civilian victims; and, then, to all traumatized people. The new wounded come together around a single fact: the radical rupture that trauma introduces into the psyche.

This rupture coincides with the theoretical trauma that rattles the doctrinal body of psychoanalysis. The shattered psyche of the new wounded fissure this body with a new eventality—the caesura of new axiological regime of events that is none other than cerebralty.

In the course of my argument, I have granted brain lesions the status of paradigm—in the two senses of this term. The paradigm is the most exceptional, the "most exemplary" of all examples and at the same time the most banal of all examples; it is both the example and an example among others. Brain lesions are paradigmatic in the first sense in that they make it possible to construct a descriptive model for all posttraumatic behavior. They are paradigmatic in the second sense in that they only represent one case among others of this model itself.

Brain lesions are paradigmatic in the sense that they are the very example of violent, meaningless, unexpected, and unforeseeable shock that transforms the identity of the subject, interrupts his relation to himself and permanently disorganizes the process of his auto-affection. At the same time, however, they are nothing but examples of this model, traumas among other traumas, no different than the others, phenomena that share the same characteristic traits with the others.

Cerebralty can constitute both a law and a case of its own law because all traumas—not exclusively brain lesions—are accompanied by brain damage. As proof of this claim, we need only point to the fact that they all entail indifference and affective coolness or attacks upon the emotional brain. Judith Lewis Herman writes:

The features of post-traumatic stress that become most exaggerated in chronically traumatized people are avoidance or constriction. When the victim has been reduced to a goal of simple survival, psychological constriction becomes an essential form of adaptation. This narrowing applies to every aspect of life—to relationships, activities, thoughts, memories, emotions, and even sensations. And while this constriction is adaptive in captivity, it also leads to a kind of atrophy in the psychological capacities that have been suppressed and to the overdevelopment of a solitary life.48

In every case, "indifference, emotional detachment, and profound passivity" figure among the symptoms attached to the state of posttraumatic stress. Affective barrenness is the trait that all these states have in common: loss of curiosity, loss of motivation, disinterest in close friends and relatives, withdrawn behavior.

There is no trauma, therefore, without impact upon cerebralty. Cyrulnik asserts: "In the wake of aggression, *metamorphosis is biological.*" This metamorphosis, born of the wound, deeply transforms "ways of seeing and responding to the world." Alan Shore has extensively analyzed the effect of childhood traumas linked to abuse upon the frontolimbic region of the brain:

Social-emotional environments that provide traumatizing attachment histories retard the experience-dependent development of the frontolimbic regions, especially the right cortical areas that are prospectively involved in affect.
regulating functions. In the last decade, a growing body of neurobiological research on PTSD has uncovered dysfunctional frontal-subcortical systems and an altered functional activity of the orbitofrontal cortex, anterior cingulate, and amygdala.51

The perturbation of affects in posttraumatic states extends well beyond cases of brain lesions and thereby assumes universal relevance.53 Biological testimony to the fact of cerebrality, or cerebral causality, far from “reducing” suffering to objective data, reveals another sense of the psychic event that depends upon its absence of sense.

ANOTHER LOOK AT THE LINK BETWEEN BIOLOGICAL VIOLENCE AND POLITICAL VIOLENCE

This is to say that neuropathology today reopens the great question of the relation between biology and the social. The objective neurological impact of trauma makes it possible to sketch a new worldwide typology of psychic illness that, pertaining neither to neurosis or psychosis, allows the disaffected faces of the victims to appear at the border between nature and community.

As we look at these faces, it is impossible to forget what unites them and effaces the distinction between lesional trauma, sociopolitical trauma, and trauma caused by natural cataclysms. The differences among the sources of such wounds tend, in fact, to become blurred on the level of their effects (phenomena of emotional barrenness and withdrawal).

It is notable that neurologists never present cases of brain lesions without placing them in a social context. Moreover, they invite us to treat such cases themselves as political cases. In the opening pages of his book The Feeling of What Happens, Antonio Damasio meditates on the figure of an old man walking through the streets of Stockholm. From a window, he watches “a frail old man make his way toward a ferry that is about to depart. Time is short, but his gait is slow; his steps break at the ankle from arthritic pain; his hair is white; his coat is worn . . . his whole body seemingly saying, Is this it? Am I in the right place? Where to next?”54

The vision of this lost old man immediately awakens a memory:

Thirty-two years ago, a man sat across from me in a strange, entirely circular, gray-painted examining room. The afternoon sun was shining on us through a skylight as we talked quietly. Suddenly the man stopped, in mid-sentence, and his face lost animation; his mouth froze, still open, and his eyes became vacuously fixed on some point on the wall behind me. For a few seconds he remained motionless. I spoke his name but there was no reply. Then he began to move a little, he smashed his lips, his eyes shifted to the table between us, he seemed to see a cup of coffee and a small metal vase of flowers; he must have, because he picked up the cup and drank from it. I spoke to him again and again and he did not reply. He touched the vase. I asked him what was going on, and he did not reply, his face had no expression. He did not look at me. . . . I got up and called him again. He stopped, he looked at me, and some expression returned to his face—he looked perplexed. I called him again, and he said, “What?”

For a brief period, which seemed like ages, this man suffered from an impairment of consciousness. Neurologically speaking, he had an absence seizure followed by an absence automatisms, two among the many manifestations of epilepsy, a condition caused by brain dysfunction.55

How could we not be struck by the obvious similarity between the general comportment and behavior of a social outcast and a person with a brain lesion? How could we avoid drawing a connection between neuropsychological disaffection and “disaffiliation”?56

The first reason for making this connection is certainly the fact that people with brain lesions are often liable to be excluded from the social bond because of their handicap. Their emotional coolness is doubled by an inability to choose, to accord weight to things, to make good decisions and such deficits often make it impossible for the subject to integrate himself into the work world. Just as reason comes up short when deprived of emotional signals, the will cannot will anything in the absence of affect. People with brain lesions most often suffer from a collapse of social status because of their inability to decide, to choose, and to will.

This is why it is possible to consider neuropathologies as “sociopathies.” The case of Phineas Gage furnishes a good example of this link between biology and the social system:

When the neuronal machinery that specifically supports the buildup and deployment of somatic markers is damaged in adulthood, as it was in Gage, the somatic-marker device no longer functions properly even if it has been normal until then. I used the term “acquired” sociopathy, as qualified shorthand, to describe a part of the behavior of such patients.57
The second reason for the relation between biology and the social derives from the fact that the social itself can be the cause of traumas that induce behaviors analogous to those of neuropaths. Certain acts of extreme violence appear to be dictated by a certain behavioral absence, by the dysfunction of emotional markers—in other words, by a disturbance of cerebrality engendered by the sociopolitical context.

There are many Gages around us, people whose fall from social grace is disturbingly similar. Some have brain damage consequent to brain tumors, or head injury, or other neurological disease. Yet some have had no overtly neurological disease and they still behave like Gage, for reasons having to do with their brains or with the society into which they were born.58

Such analyses lead us to take into account the “sociopolitical faultlines in which the self has exploded.”59 Traumatized subjects, “disconnected from their affects,” present symptoms analogous to those that accompany brain disorders even though they “are not related to any lesion.”60

It now appears that the impact of social war is just as forceful as a brain lesion and no less violent than being struck by a bullet or an iron bar. Even if such blows do not always occur as sudden events but tend to be more continuous or harassing, their sense, like that of a brain lesion, remains dissimulated beneath an absence of sense—social conflict without dialectic, as anonymous as a natural catastrophe—an absence that reveals the very coolness of the political and the social today.

Damasio affirms:

Developmental sociopaths or psychopaths are well known to all of us from the daily news. They steal, they rape, they kill, they lie. They are often smart. The threshold at which their emotions kick in, when they do, is so high that they appear unflappable, and are, from their self reports, unfeeling and uncaring. They are the very picture of the cool head we were told to keep in order to do the right thing. In cold blood, and to everybody’s obvious disadvantage, including their own, sociopaths often repeat their crimes. They are in fact another example of a pathological state in which a decline in rationality is accompanied by a diminution or absence of feeling.61

We retain this formulation: “the threshold at which their emotions kick in.” Reflecting upon trauma, today, obviously constitutes a reflection on the nature of this threshold. Difficulty letting oneself be touched is the evil of our times, the paradoxical result of being wounded. To be wounded, indeed,
Plastic Materialities

Politics, Legality, and Metamorphosis in the Work of Catherine Malabou

Brenna Bhandar and Jonathan Goldberg-Hiller, Editors
Plastic Materialities
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In “Truth and Power,” an interview from 1977, Michel Foucault declares: “What we need . . . is a political philosophy that isn’t erected around the problem of sovereignty, nor therefore around the problems of law and prohibition. We need to cut off the King’s head: in political theory that has still to be done.”

Why does Foucault affirm this persistence of kingship in contemporary political theory? Hasn’t the passage from royal to democratic or popular sovereignty already been accomplished for a long time in the West? According to Foucault, this passage hasn’t changed the very structure of sovereignty, which is always attached—whatever the polity it characterizes—to monarchy—that is, with a system of power having a single center and in which the law is the only expression of authority. This model is, according to Foucault, that of Hobbes’s Leviathan. To cut off the king’s head means that we “abandon the model of Leviathan, that model of artificial man who is at once an automaton, a fabricated man, but also a unitary man who contains all real individuals, whose body is made up of citizens but whose soul is sovereignty. We have to study power outside the model of Leviathan, outside the field delineated by juridical sovereignty and the institution of the State.”

Western democracies are, according to Foucault, still dependent upon this model because of their juridical structure. They are, then, secretly inhabited by the remnant figure of the sovereign; that is, of the king.

It thus seems that no form of sovereignty can exist independently of the figure of the sovereign. No sovereignty without the sovereign. No sovereignty without a king. This explains why the very notion of
sovereignty has to be criticized or, as Derrida declares in his seminar *The Beast and the Sovereign*, why it has to be deconstructed.

Is such a deconstruction on its way? Does it have any chance to attain its goal? To be accomplished? Have we, after Foucault, after Derrida—and I add, after Agamben—cut off the king’s head? My answer, here, is no.

How can I justify such a position? In order to develop my argument, I first turn toward the concept of biopolitics, forged by Foucault and re-elaborated by Agamben and Derrida in two different ways. According to Foucault, sovereignty, as both a structure of power and a polity, has disappeared from the West with the emergence of modernity. A new form of organization, which has nothing to do with sovereignty, substitutes for it. At the turn of the seventeenth century, the pyramidal model of the Leviathan, described in political philosophy, appears as what it is in reality: the ideological mask that hides a disappearance or a void—precisely, the void of sovereignty. Foucault declares that from that time through the eighteenth century, a new form of power emerges that is “absolutely incompatible with relations of sovereignty” and is occulted by the persistent ideological affirmation of sovereignty. This new form of power is constituted by the paradoxical dissemination of power, the existence of multiple networks, sites of control, the supremacy of the norm over the law, of discipline and technologies of conditioning over repression. “One must keep in view the fact that, along with all the fundamental technical inventions and discoveries of the seventeenth and eighteenth centuries, a new technology of the exercise of power also emerged which was probably even more important than the constitutional reforms and new forms of government established at the end of the eighteenth century.”

This new exercise of power is by no means reducible to the structure of sovereignty: “Power had to be able to gain access to the bodies of individuals, to their acts, attitudes and modes of everyday behaviour. . . . Hence there arise the problems of demography, public health, hygiene, housing conditions, longevity and fertility. And I believe that the political significance of the problem of sex is due to the fact that sex is located at the point of intersection of the discipline of the body and the control of the population.” The intersection of the discipline of the body and the control of population is constitutive of what Foucault calls, for the first time in 1974, “biopolitics.”
Later, in *History of Sexuality*, volume 1, he writes: “For millennia, man remained what he was for Aristotle: a living animal with the additional capacity for a political existence; modern man is an animal whose politics places his existence as a living being in question.” Further, he wrote, Western man was gradually learning what it meant to be a living species in a living world, to have a body, conditions of existence, probabilities of life, an individual and collective welfare, forces that could be modified, and a space in which they could be distributed in an optimal manner. For the first time in history, no doubt, biological existence was reflected in political existence; the fact of living was no longer an inaccessible substrate that only emerged from time to time, amid the randomness of death and its fatality; part of it passed into knowledge’s field of control and power’s sphere of intervention.

Biopolitics plays a double role. Because it inaugurates a new form of political authority made of micropowers that produce a “subjugation of bodies and control of populations,” biopolitics is already, in itself, a deconstructive tool of sovereignty. It challenges its structure. At the same time, biopolitics covers its own deconstructive power to the extent that it hides itself behind the traditional ideological mask of sovereignty. If the emergence of biopower inaugurates the reign of the norm, it conceals the operation of normalization itself behind the old figure of the law. A normalizing society is the historical outcome of a technology of power centered on life. “We have entered a phase of juridical regression in comparison with the pre-seventeenth-century societies we are acquainted with; we should not be deceived by all the Constitutions framed throughout the world since the French Revolution, the Codes written and revised, a whole continual and clamorous legislative activity: these were the forms that made an essentially normalizing power acceptable.” The “right” to life becomes the biopolitical mask that dissimulates the normalization of life.

What, then, does the philosopher’s task consist in? The philosopher has to deconstruct biopolitical deconstruction, that is, to unveil it and resist its ideological tendency. Such a task requires that we situate the point where biology and history, the living subject and the political subject, meet or touch.

The issue I am raising here appears precisely at that intersection. It concerns the philosophical discourse, more precisely, the structure of
the philosophical critique of biopolitics. How do contemporary philosophers characterize the convergence of biology and history?

As Foucault affirms in several texts, the emergence of biopolitics is inseparable from the emergence of biology as a science. It is only at the turn of the seventeenth century, when biology is constituted as a science replacing natural history, that biopolitics becomes possible. The political subject becomes henceforth the living subject, the individual as it is determined by biology.

The problem is the following: for Foucault, as for Agamben or Derrida, even in different ways, biology is always presented as intimately linked with sovereignty in its traditional figure. Biology is always depicted as a science that transgresses its limits to repress, domesticate, instrumentalize life; that is, as a power of normalization, but a power that precisely occults its essential relationship to the norm and appears as what inscribes law within organisms. Function, program, teleology, organism: these are some examples of how biology conceptually and practically imprints the figure of law and of the sovereign at the heart of biopolitics, which is also at the heart of life. An organism always has the form of a micro-Leviathan. This explains why a thinker like Deleuze says that we have to think of bodies outside organisms. Biology plays the part of the sovereign, Derrida says, of the king.11 This also explains why biology always appears, for philosophers, as an instrument of power, never as an emancipatory field or tool.

There can’t be any biological resistance to biopower. This means that biology—the biological determination of life—has to be transgressed. As if there were always two concepts of life in life. For the philosophers I am talking about here, there exists a nonbiological definition of life that transgresses or exceeds the scientific, objective one. This surplus of life is symbolic life. Symbolic life as opposed to biological life. This symbolic life appears as the resource or the potentiality of resistance.

This double-sided concept of life is easily noticeable in Foucault’s discourse on the body, in Agamben’s analyses of bare life, and in Derrida’s elaboration of the notion of the animal.

In the History of Sexuality, Foucault declares: “Hence I do not envisage a ‘history of mentalities’ that would take account of bodies only through the matter in which they have been perceived and given meaning and value; but a ‘history of bodies’ and the manner in which the most material and most vital in them has been invested.”12 If biology invests what
is the “most material” and the “most vital” in bodies, it means that there is a less material and less vital dimension. What can it be outside the symbolic body? The flesh?

In *Homo Sacer*, Agamben writes: “Bare life is no longer confined to a particular place or a definite category. It now dwells in the biological body of every living being.” It means that bare life is not reducible to the biological. It is the symbolic part of life that dwells within the biological body. A body within the body.

In the *Beast and the Sovereign*, Derrida characterizes the animal as a poem. The poem is irreducible to an organism. The poetic dimension of the animal is what forever escapes biopower and the instrumentalization of life. This poetic essence constitutes the sacred part of life. In a previous text, “Faith and Knowledge,” Derrida had already declared that “life has absolute value only if it is worth more than life.” More than the “natural” and the “bio-zoological.” “The dignity of life can only subsist beyond the present living being.” Life is “open to something and something more than itself.”

A border remains then, in these approaches, between two notions of life, between two lives. Deconstruction or critique of biopolitics maintains the old relationship between the biological and the symbolic, the discrepancy, the separation that exists between them. This is what prevents such a deconstruction or such a critique from superseding the traditional or metaphysical approaches to life. What do I mean by the “old relationship”? I refer here to Ernst Kantorowicz’s famous book *The King’s Two Bodies: A Study in Mediaeval Political Theology*. The king has two bodies: a natural body and a nonmaterial one.

Let me recall the definition of the two bodies: “For the King has in him two bodies, viz., a Body natural, and a Body politic. His Body natural is a Body mortal, subject to all Infirmities that come by Nature or Accident [. . .]. But his Body politic is a Body that cannot be seen or handled, consisting of Policy and Government [. . .]” Eric Santner, in his beautiful book *The Royal Remains: The People’s Two Bodies and the Endgames of Sovereignty*, calls these two bodies the biological one and the symbolic one. It is then striking to notice that the critique or deconstruction of sovereignty is structured as the very entity it tends to critique or deconstruct. By distinguishing two lives and two bodies, contemporary philosophers reaffirm the theory of sovereignty, that is, the split between the symbolic and the biological.
Of course, for Foucault, Derrida, and Agamben “symbolic” does not mean immortal or infinite as opposed to biological (understood as finite and destructible). Yet the partition remains—and it is, in effect, a “royal remain”—between the empirical and the symbolic, between the natural and something that is irreducible to it, whatever its definition. In criticizing sovereignty, philosophy reveals its own sovereignty, that is, the two bodies of its discourse.

It has become urgent to deconstruct this deconstructive discourse, to put an end to the split between the two bodies. It has become of primary importance to stress the political force of resistance inscribed in most recent biological concepts. It is time to affirm that biology can play a part other than that of a royal remain. The time has come to free Continental philosophy from the rigid separation it has always maintained between the biological, hence the material, and the symbolic, that is, the nonmaterial or the transcendental.

Recent biological discoveries reveal the plasticity of difference: that is, the plasticity of the genome, of cells, of brain development—all elements that challenge the idea of a strict genetic determinism and allow us to go beyond the classical distinction between body and flesh, between a material, obscure, mechanically determined organism, on the one hand, and a spiritual body or incarnated spirit, on the other. What appeared, until recently, as irreversible or unchangeable—the genetic code, cellular differentiation, the phenotype, in general—is currently described as plastic, that is, mutable and reversible. Until recently, Continental philosophers have articulated the notion of difference. We now have to elaborate a theory of what changing difference may mean. The reversibility of difference, brought to light by current biology, opens a new perspective on the relationship between the symbolic and the biological. Their dialectical interplay is inscribed within the body, not outside of it, putting an end to the logic of the two bodies but consequently also challenging the structure of sovereignty inherent in this philosophical discourse. One of the most important of all current biological concepts, that of epigenetics, is a privileged factor in this total change of orientation.

What I develop here concerning philosophy is valid for any other discourse (political science, anthropology, law, etc.) where a fixed and rigid meaning of the symbolic that undermines the deconstruction of the Leviathan still prevails. The symbolic still colonizes all discourses in human sciences. It is as if we still need to affirm the existence of a
beyond or an outside of the real to confer meaning to reality, as if a prior structure, necessarily nonmaterial, was requested to give sense to materiality itself. As if we need the two bodies to kill the king . . .

What does “symbolic” here mean? The contemporary signification of this term, as we know it, which is different from “symbolism,” has been brought to light by Lévi-Strauss, mainly in his introduction to the work of Marcel Mauss. The symbolic designates the structural spacing of the different entities that compose a language, a political community, or the ethical values of a society.

According to Lévi-Strauss, such spacing has to do with the existence of what he calls the floating signer, able “to represent an undetermined quantity of signification, in itself void of meaning and thus apt to receive any meaning.” It is “a signer with a vague, highly variable, unspecifiable or non-existent signified.” As such, a “floating signer” may “mean different things to different people: they may stand for many or even any signifieds; they may mean whatever their interpreters want them to mean.” This floating signer, which maintains the correspondence between signifiers and signifieds, is said to possess a “value zero,” a *symbolic* value.18

Here, as we see, the symbolic means this empty space that gives language its mobility. It is because our language is full of these little nonsensical words, like “hau,” “mana,” and all the ones quoted from Lewis Carroll by Deleuze, that it can function. So the symbolic here designates the empty boxes or places or spaces, the value zero which determines the arrangement of any group of significant elements. What Derrida calls the supplement. An excess.

The symbolic, defined as the empty space, has, according to Lévi-Strauss, a double function: the empty space, the “mana,” for example, is both the sacred and what is offered to sacrifice. The most preserved and the most exposed, both the sacred and the sacrificeable. Life, in modernity, appears precisely as both sacred and sacrificeable. This explains Agamben's famous book title *Homo Sacer*. “Sacer” designates something that is neither in nor out and both in and out at the same time. This is the status of “bare life”: something that is nowhere, neither within nor outside the community. That is, both sacred and offered to murder. As we previously saw, bare life never coincides with biological life. Again: “Bare life inhabits the biological body of each living being.” The space that separates bare life from the biological body can only be the space of the symbolic.
For Foucault, power mechanisms tend to obliterate, reduce, or restrict the emptiness of the symbolic, to fill it up with a content, to interrupt its mobility and transform it into an essence or a fixed entity. This is what sovereignty is: the result of a transformation of the floating signifier into a rigid figure, that of the king or of the law or of any central and centralized motif. Biology is thought of as what makes this transformation possible. Biological concepts are for Foucault immediately edible or assimilable by politics: hence, for example, blood and sex, which are constituted as organic-political values that appear as central and centralized entities obliterating the dissemination of both power and bodies.

Biology, again, is the ally of sovereignty. It never serves the cause of the symbolic but always tries to hide it. Of course, this eclipse is not a suppression. Politics itself, as well as sovereignty, is rooted, like every other reality, in the symbolic economy. Resisting sovereignty, then, amounts to reintroducing the excess, to unveiling it and making it ungraspable by power. Such a gesture necessarily implies a transgression of the biological. The resisting bodies, with their economy of pleasures (Foucault insists on the plural).

Deleuze, in “How Do We Recognize Structuralism?,” shows that the symbolic, defined as a prior nonmaterial empty space, occupies a major role in Foucault’s thought. Deleuze demonstrates that the empty or floating signifier for Foucault is the notion of subject, or subjectivity, which is not a substance or an essence but appears, on the contrary, as a pure void, a gap, that gets its content from its self-formative gesture. The self and the body that are thus formed and transformed are not the biological ones. Even if Foucault insists, particularly in his last seminars, on the importance of the biological body for philosophical discipline, as it appears in Cynicism, for example, it is clear that the formation and transformation of the self operates on the symbolic body in the first place. It is clear that we have two bodies in one. In all cases, biology is always dependent on the symbolic. Always derived from it. A secondary phenomenon. Biological life remains obscure, predetermined, genetically programmed, deprived of any meaning. Biology remains attached to control and sovereignty.

As I said at the start, the problem is that this critique of sovereignty is exactly structured as what it criticizes. The split between the biological and the symbolic is the scarlet letter printed by sovereignty on the philosophical body.
If we try to erase this mark, if we can affirm that plasticity inhabits the biological, that it opens, within organic life, a supplement of indeterminacy, a void, a floating entity, it is then possible to claim that material life is not dependent in its dynamic upon a transcendental symbolic economy; that on the contrary, biological life creates or produces its own symbolization.

Epigenetics is able to provide us with such a concept of biological supplement. I briefly explain what epigenetics means before I insist, in conclusion, on its political implications.

The term epigenetics (Greek: *ἐπί*-, over, above) was coined by Conrad Waddington in 1942. It designates the branch of biology that studies gene expression, that is, the molecular processes that allow the formation of an individual structure—the phenotype—out of the primary genome or DNA sequence. Gene expression concerns the translation or transcription from DNA into proteins via RNA. The passage from genome to phenotype involves the molecular mechanisms that constitute cell differentiation, extend genes’ action, and give the organism its form and structure. This implies that certain genes are activated and some others inhibited. These operations of activation and inhibition depend on epigenetic factors, that is, factors of change that translate DNA without altering it. Epigenetics, in other words, studies nongenetic changes or modifications. These changes are of primary importance in the biological fashioning of individual identities.

What is extremely interesting is that such changes are both chemical and environmental. Environment, experience, and education appear to be epigenetic factors that play a major role in this fashioning. The brain’s development, for example, depends for a great part upon epigenetic factors. The anatomy of the brain is genetically determined. But the innumerable synaptic connecting possibilities are not. Synapsis formation escapes genetic determinism and is indebted to contacts that the organism has established with its environment. The brain’s connective development depends, throughout its long lifetime, upon experience and learning. It means that we are, for a great part, the authors of our own brains. As a contemporary neurobiologist affirms: “the brain is more than a reflection of our genes.”

Plasticity is in a way genetically programmed to develop and operate without program, plan, determinism, schedule, design, or preschematization. Neural plasticity allows the shaping, repairing, and remodeling of
connections and in consequence a certain amount of self-transformation of the living being.

The difference between genetics and epigenetics can probably be compared to the difference between writing and reading a book. Once a book is written, the text (the genes or DNA-stored information) will be the same in all the copies distributed to the interested audience. However, each individual reader of a given book may interpret the story slightly differently, with varying emotions and projections as they continue to unfold the chapters. In a very similar manner, epigenetics would allow different interpretations of a fixed template (the book or genetic code) and result in different read-outs, dependent upon the variable conditions under which this template is interrogated.22

In their important book *Evolution in Four Dimensions*, Eva Jablonka and Marion J. Lamb give a very similar definition: “Think about a piece of music that is represented by a system of notes written on paper, a score. The score is copied repeatedly as it is passed on from one generation to the next. [. . .] The relationship between the score and the music is analogous to the genotype/phenotype distinction.”23

The becoming obsolete of the notion of program in biology opens new conditions of experience, new thresholds of rationality, as well as new philosophical and theoretical paradigms. If nature and culture are intimately linked in and through epigenetics, it means that nature and history meet within the biological, that there is a biological encounter between them. In that sense, biology ceases to be a pure deterministic field, with no symbolic autonomy, a simple raw material for political use. On the contrary, epigenetics is a biological notion that resists the political reduction of biology to a pure and simple vehicle of power. What epigenetics reveals is the originary intrication of the biological and the symbolic that never requires a transgression of the biological itself.

I have no intention here to negate the symbolic dimension of life or to affirm that life has only a biological sense. My contention is that if we admit that history and biology form a dialectical couple within biological life itself, we don’t need to survey the biological from an overarching structural point of view, but on the contrary, we can discover the structural meaning of the empirical within the empirical, within “vibrant matter.”24

If we keep the definition of the symbolic as an empty or vacant space, this empty space is currently becoming what I call the plastic space or the locus of plasticity, something that allows play within the structure, that
loosens the frame’s rigidity—the frame being biological determinism. The symbolic here appears as that which allows the interplay of determinisms and freedom within the frame or the structure. This symbolic biological dimension is the transformative tendency internal to mortality, the self-transformative tendency of life. It is life transforming itself without separating itself from itself. I would like to conceive of life as possessing its own modes of self-transformation, self-organization, and self-directedness.

What I specifically developed here about life may be extended to other contexts in which the symbolic, defined as a surplus or a supplement, an excess over the real, is conceived of as a critical political weapon. As we know, the structuralist definition of the symbolic was elaborated within the frame of the relationship with primitive societies, as a common feature to all human communities. To challenge the priority of the symbolic, thus defined, is then not only to touch on a particular point, for example, that of philosophy and biology, as I have done here, but to address the issue of the political legitimacy of such a priority in general. Do we still have to presuppose a gap between the structural and the material in order to render the material meaningful? Do we have to transcend the empirical organization of the real in order to produce a theory of the real? Or shouldn’t we, on the contrary, consider such gestures as sovereign acts that reinscribe, just as kingship, the excess at the heart of meaning?

I wonder if the categories of excess, surplus, supplement are still accurate to approach any kind of organization. Bataille used to oppose the excess, the “accursed share,” to the servility of Hegelian dialectics. As we know, for Hegel, energy never comes from outside the system but from the redoubling of the negative within it. What if he was right? What if the dialectical plasticity of difference was, more than the indifference of the symbolic, the most efficient way to materialize the deconstruction of sovereignty?

NOTES

2. Foucault, Society Must Be Defended, 34.
3. Derrida, Beast and the Sovereign.
4. Foucault, Society Must Be Defended, 35.
7. Foucault, History of Sexuality, 143.
8. Foucault, History of Sexuality, 142.
10. Foucault, History of Sexuality, 144.
11. See Derrida, Beast and the Sovereign.
12. Foucault, History of Sexuality, 152.
15. Kantorowicz, King’s Two Bodies.
16. Plowden (1816), quoted in Kantorowicz, King’s Two Bodies, 7.
17. Santner, Royal Remains.
22. Jenuwein (Max Planck Institute of Immunology, Vienna), quoted in “What Is Epigenetics?”
Whither Materialism? Althusser/Darwin

Catherine Malabou

Whither materialism? This title echoes another one, “Whither Marxism?,” that of a conference held in 1993 in California where Derrida presented an oral version of *Specters of Marx*. With regard to this ambiguous title, Derrida proposed that “one may hear beneath the question ‘Where is Marxism going?’ another question: ‘Is Marxism dying?’”

The same ambiguity will be at work throughout this chapter. Where is materialism currently going? Is materialism currently dying? These two questions will of course allow me to address the problem of Marxism proper but from the point of view of what Marxism has repressed, that is, materialism itself. This strange approach to Marxism, according to which, in all Marx’s work, an official materialism would be repressing a more secret one, is defended by the late Althusser in a fascinating text from 1982: “The Underground Current of the Materialism of the Encounter.”

In this text, Althusser brings to light “the existence of an almost completely unknown materialist tradition in the history of philosophy, . . . a materialism of the encounter, and therefore of the aleatory and of contingency. This materialism is opposed, as a wholly different mode of thought, to the various materialisms on record, including that widely ascribed to Marx, Engels, and Lenin, which, like every materialism in the rationalist tradition, is a materialism of necessity and teleology; that is to say, a transformed, disguised form of idealism.” Such a repressed materialism is the one I intend to interrogate here: a materialism which threatens necessity, order, causality, meaning, a “dangerous” materialism, as Althusser characterizes it, a materialism—this is
the central idea of the article—“which starts out from nothing.” I will constantly question this: what does starting out from nothing mean, and is it possible?

I quote Althusser again: “to free the materialism of the encounter from this repression; to discover, if possible, its implications for both philosophy and materialism; and to ascertain its hidden effects wherever they are silently at work—such is the task that I have set myself here.”

This task is clearly an answer to the first question: whither materialism? Where is it going? At the same time, the second question immediately appears. Is this materialism of the encounter still a materialism, Althusser asks. Is not the revelation of the repressed always the end of what is revealed? Will materialism whither in its contingent form, in the nothingness it presupposes? Will it open new paths, or will it die?

Again, I intend to show that these two questions are of particular philosophical and political relevance and urgency for our time.

Now, why Darwin? The list of authors Althusser considers representative of the new materialism includes Epicurus, Machiavelli, Spinoza, Hobbes, Rousseau, Nietzsche, Heidegger, Derrida, Deleuze, a certain Marx, and Darwin. Why Darwin? Is it an arbitrary choice? It is in a way. It has to be. Contingency alone can adequately respond to contingency. So why not Darwin. And it is not, of course. The encounter between Althusser and Darwin I am risking here helps to situate the specific problem raised by the notion of the encounter itself. Both share the same vision of this strange ontological point of departure: nothingness, nothing, the same critique of teleology, the same concept of selection—thus the same materialism.

Darwin? A materialist? Yes, indeed, according to Althusser, Darwin is a materialist of the encounter.

Let me propose some definitions before I start the demonstration. Materialism is a name for the nontranscendental status of form in general. Matter is what forms itself in producing the conditions of possibility of this formation itself. Any transcendental instance necessarily finds itself in a position of exteriority in relation to that which it organizes. By its nature, the condition of possibility is other than what it makes possible. Materialism affirms the opposite: the absence of any outside of the process of formation. Matter’s self-formation and self-information is then systematically nontranscendental.
There are then two possibilities of explaining and understanding the origin of this immanent dynamic. Dialectical teleology is the first well-known one. The formation of forms—forms of life; forms of thought, forms of society—is governed by an internal tension toward a telos, which necessarily orients and determines every self-development. This teleological vision of materialism, which has long been predominant, is precisely the one Althusser rejects here. Such a materialism presupposes that “everything is accomplished in advance; the structure precedes its elements and reproduces them in order to reproduce the structure.”

It amounts in reality to a transcendental analytics, which is why Althusser may identify it with idealism.

Materialism of the encounter, on the contrary, doesn’t presuppose any telos, reason, or cause—such a materialism claims, against any transcendental structure, “the non-antiority of Meaning.” From this second point of view, forms are encounters that have taken form. Althusser constantly insists on such a “form taking,” or “crystallization”: “The crystallization of the elements with one another (in the sense in which the ice crystallizes).” Here, the formation of form has to be sought in what “gives form” to the effects of the encounter. The encounter has to “take form” and “take hold” in order to last and become necessary.

It is while explaining this very specific type of plasticity—the crystallization and taking of form out of nothing—that Althusser turns toward Darwin. “Instead of thinking contingency as a modality of necessity, [. . . ] we must think necessity as the becoming-necessary of the encounter of contingencies. Thus we see that not only the world of life (the biologists, who should have known their Darwin, have recently become aware of this), but the world of history, too, gels at certain felicitous moments, with the taking hold of elements combined in an encounter that is apt to trace such-and-such a figure: such-and-such a species, individual, or people.” It is precisely the passage between a species, an individual, and a people that I will examine here. Are these forms equivalent? Can we transpose what happens at the level of nature to that of the political and of history?

I first ask to what extent social selection is assimilable to natural selection as Darwin elaborates it. I will then examine the difference between a natural encounter and a social and political one. Here I ask where in society is the void, the nothingness, the point zero from which
a form can emerge? In conclusion, I attempt to situate Althusser’s new critique of capitalism, its impact on our philosophical time, and the current emergence of new materialisms.

My use of the word “plasticity” a moment ago to describe the crystallization of form in the materialism of the encounter is not entirely my decision. An attentive reading of The Origin of Species reveals that plasticity constitutes one of the central motifs of Darwin’s thought. Indeed, plasticity situates itself effectively at the heart of the theory of evolution. How does a “form” take form according to Darwin?

The concept of plasticity allows the articulation—as Darwin indicates at the beginning of his book—of a fundamental connection between the variability of individuals within the same species and the natural selection between these same individuals.

Variability first. There is no species without it. To refer to Althusser’s terminology, variability is the “void” or “empty point” or “nothingness” from where forms can emerge. The most important characteristic of a species is its mutability; the great number of potential morphological transformations observable in the structure of the organism is a function of its aptitude to change forms. Contrary to a widespread misreading of Darwin, a species is never rigid or fixed. Filiation reveals the high degree of a species’ plasticity. Considering descent, one has the impression that “the whole organization seems to have become plastic.” At the beginning of chapter 5, Darwin writes, “the reproductive system is eminently susceptible to changes in the conditions of life; and to this system being functionally disturbed in the parents, I chiefly attribute the varying or plastic condition of the offspring.” Characteristic of variability, plasticity designates the quasi-infinite possibility of changes of structure authorized by the living structure itself. This quasi infinity constitutes precisely the openness or the absence of predetermination which makes an encounter possible.

The form “takes” when variability encounters natural selection. Natural selection transforms the contingency of the former into a necessity. “I am convinced that the accumulative action of Selection . . . is by far the predominant Power [in the economy of mutability and variability].” One must therefore understand that selection guides variability and that it regulates the formation of forms. Selection allows the taking of oriented form, which obeys the natural exigency of the viability, consis-
tency, and autonomy of individuals. The plastic condition—otherwise called the motor of evolution itself—therefore hinges on plasticity, understood as the fluidity of structures on the one hand and the selection of viable, durable forms likely to constitute a legacy or lineage on the other. The materialism of the encounter thus pertains to a natural process that assures the permanent selection and crystallization of variations.

The relation between variation and selection raises the fundamental philosophical question I would like to address here to Althusser. In nature, the relation between variation and selection is not, properly speaking, planned. Paradoxically, natural selection appears in Darwin as a mechanism deprived of all selective intention. The best is the fittest, but aptitude is here independent of all value judgments or all actual teleology.

Natural selection is ateleological, without intention. It is, again, an encounter. Insofar as it is not more than a mechanism—a term that, by definition, evokes a blind movement, the opposite or reverse of freedom—natural selection is paradoxically nonanticipatable, a promise of forms never chosen in advance, of differences to come.

However, this is again the central problem; it seems that this natural formation of forms cannot have, without disguise or misrepresentation, a social destiny. We know the errors of “social Darwinism,” which is everything but a philosophy of plasticity to the degree that it reduces down to a simple theory the struggle of the strong against the weak. For many years, particularly in France, natural selection came to be understood as a simple process of eliminating the weakest and of life as a merciless struggle for power in all its forms. We may have also confused Darwinism and Malthusianism, despite precise precautions taken regarding this subject in The Origin of Species, taking natural selection as a simple quantitative dynamic governed by the ratio of the number of individuals in a population and the availability of resources. This interpretation is absolutely not Darwinian and, again, is a misunderstanding.

If such a misunderstanding is possible, though, is it not because a materialism of the encounter seems to be socially and politically unsustainable because it can work only at the level of atoms or of forms of life, never when it comes to individuals or peoples? The automaticity and nonteleological character of natural selection seems definitely lost in social selection. Why—in the logic of exams, in competitions, or in professional selection in general, the discrimination of candidates regarding aptitude functions, of competencies, or of specific technical capacities—does selection seem to lack plasticity; that is, fluidity on the
one hand and the absence of any predetermined selective intention on
the other? Why, most of the time, does social selection give the feeling
of being an expected or agreed-upon process, a simple logic of confor-
mity and reproduction, whereas natural selection is incalculably open to
possibility?

Is not the materialism of the encounter always doomed to be re-
pressed by that of teleology, anteriority of meaning, presuppositions,
predeterminations?

The plastic condition Darwin describes calls for a particular articula-
tion of identity and difference. Identity, because individuals selected are
able to reproduce and therefore to inscribe themselves into the stabil-
ity of an identifiable type. Difference, because this identity is not rigid
and is obtained precisely from variability. Specific identity is an iden-
ty produced by the differentiation of structures and types. However,
in nature, there is an automatic and blind equilibrium between identity
and difference, while it seems that, in the social order, there is always
a predominance of identity over difference and that the natural grace
of the balance is interrupted. The idea of choice, according to an appar-
et paradox, is again entirely absent from natural selection. In nature,
selection is unconscious. As soon as selection becomes an intention of
selection, which presupposes predefined criteria, certainly programmed
this time, as soon as there is no more naturality or spontaneity in the
promotion, the plastic condition is menaced or even nonexistent. A mate-
rialism, again, is repressing another.

In nature, the fittest is never the one that accidentally fell upon a fa-
vorable environment for its survival. It is a matter of simply “adjust[ing]
a response” to the environment, to restate it in François Jacob’s terms. Adaptation, the agreement between the environment and variation,
can of course be unpredictable. There is no better “in itself.” Certainly,
Darwin described natural selection as a work of perfectioning or as an
“improvement,” but these notions of “better” remain without inten-
tion. Darwin was very reticent to speak of “progress”; he himself never
wanted to understand his theory as a theory of “evolution,” a term that
could risk suggesting a linear progress comparable to the Lamarckian
law of complexification. The improvement of which Darwin speaks is
not subordinated to a finalism. The form of survivors, its permanence
over time, is in a certain way sculpted by the disappearance of the dis-
advantaged, by the return of eliminated living forms to the inorganic.
In the words of Canguilhem, “death is a blind sculptor of living forms.”
The inanimate therefore becomes, negatively, the condition of sense or the project of the living.

Could we then consider that Darwinism stops itself at the threshold of society and culture and that all social destiny betrays it, which is to say, precisely, alters it? Selection would then be nothing other than a reproductive process of the identical.

Can we not envision, in spite of everything, a plasticity of social condition and recover the wealth of variations and deviations of structure at the heart of culture? Is it not possible to think a social and political equilibrium in the relation between variation and selection? Where are we today with Darwin on this point?

And where are we with Althusser? According to him, the same plasticity as the biological one should prevail in the social and political order. This is the profound meaning of his new materialism. Let’s go back to individuals and peoples.

Althusser comes to the “taking form” of the individual when he talks about Machiavelli’s *Prince*. Here is the political version of the materialism of the encounter at the level of the individual: “Machiavelli [. . . ] moves on to the idea that unification will be achieved if there emerges some nameless man. . . . Thus the dice are tossed on the gaming table, which is itself empty.”¹⁹

So we have here this void, this absence of meaning, telos, or pretermination. Form will emerge out of the encounter between fortune—that is, contingency—and the prince’s virtue—that is, his ability to select the best possibilities fortune offers, yet a selection made with no intention to do so. As if there was a naturally plastic balance between the lion and the fox, fortune and virtù.

Consequently, the Prince is governed, internally, by the variations of this other aleatory encounter, that of the fox on the one hand and the lion and man on the other. This encounter may not take place, but it may also take place. It has to last long enough for the figure of the Prince to “take hold” among the people—to “take hold,” that is, to take form, so that, institutionally, he instils the fear of himself as good; and, if possible, so that he ultimately is good, but on the absolute condition that he never forget how to be evil if need be.²⁰

But how can there exist, in the social, such a nameless man, able to begin from nothing, from such a nameless place, from such a nonteleological formation of forms?
The problem becomes all the more urgent when Althusser comes to the people or community via Rousseau. The specific political issue Rousseau raises is the following: to the extent that men have been “forced to have encounters”21 when they were in the state of nature, forced into the social, is it possible to transform this imposed and illegitimate state of things into a legitimate one? That is, is it possible to re-create the conditions for a contingent and nonteleological form of encounter once the encounter has already taken place? To plasticize it retrospectively in some way? “To rectify an illegitimate (the prevailing) form, transforming it into a legitimate form?”22 Such is, according to Althusser, the leading question of The Social Contract. “The most profound thing in Rousseau is doubtless disclosed and covered back up [decouvert et recouvert] here, in this vision of any possible theory of history, which thinks the contingency of necessity as an effect of the necessity of contingency, an unsettling pair of concepts that must nevertheless be taken into account.”23 Again, where is the void, the empty square from where we can start undertaking such a shift? “It is in the political void that the encounter must come about,”24 Althusser writes. But where is it and what can it be?

There seems to be no void in our societies. Let’s have a look at the process of social selection—understood, for example, as the sorting and choosing of capacities or special aptitudes within the framework of examinations, contests, or recruitment interviews—which immediately appears as the antonym to the plastic condition that presides over the economy of natural selection and its nonsignifying sense.

The catalog of tasks, the outline of jobs, the protocol of exams always precede the real encounter with the variability and diversity of candidates, thus preventing differences from emerging by themselves. Such selection cannot, in fact, consist in the production of differences but, instead, only in the perpetuation of the criteria through which one chooses them. It is not the best that are selected or even those that exhibit an astonishing capacity for adaptation but those who are the most conformable. Agreement takes precedence over value. Ensuring the perpetuation and renewability of the identical, social selection therefore ensures the return of sociological heaviness, never the emergence of singularities out of nothing.

Marx, particularly in his Critique of Hegel’s Philosophy of Right, was the first thinker to have denounced the conservative characteristic of
the social selection of aptitudes. Taking the example of “functionaries,” Marx shows that one expects of them no special competence beyond that which consists in perpetrating the established order.\textsuperscript{25} Hegel writes in his \textit{Elements of the Philosophy of Right} that these “individuals are not destined by birth of personal nature to hold a particular office, for there is no natural or immediate link between the two. The objective moment in their vocation is knowledge and proof of ability.”\textsuperscript{26} However, these capabilities, says Marx, are not capabilities; no “technique” is necessary to become a functionary, no specific expertise except for the talent of obedience, of respect for the state, and therefore of conformism.

Another critique of social selection would be conducted in the work of Pierre Bourdieu, notably in the famous text \textit{The Inheritors},\textsuperscript{27} which he coauthored with Jean-Claude Passeron in 1964 and which concerns the class trajectory of students. Selection norms, always defined in advance, constitute a veritable program and coincide, again, with pure and simple values of conformity, those of the dominant class, that fix the criteria of “cultural legitimacy.” The principal characteristic of this legitimacy is to be a dissimulated social authority. This is the function of social reproduction of cultural reproduction, founded upon “privilege”—by definition the most predetermined selective criterion ever.

Social selection has the goal of reproducing order, privilege, or the dominant ideology. One never selects the aptitude for action or political struggle, for example, but always aptitudes that respect order. Who among us has never been shocked by the injustice of this sorting, this triage, which retains only those individuals most compliant, never the most singular, and which, finally, elects so many mediocre, incompetent, and narrow minds? Who has never had the feeling that social selection was, in effect, a program and never a promise and that the morphological transformations of society were, deep down, only agents of conservation?

The question that arises then is whether the destiny of social selection is a fatality, or if selection could, in the political realm, join in any way the natural plastic condition. How can we ensure, within the realm of community and culture, the equilibrium between variation and selection, the future of difference, the promise of unexpected forms?

\begin{flushright}
\textbf{\textsuperscript{■} Althusser is in reality perfectly aware of these difficulties, of the discrepancy between the encounter in the ontological or natural order and the encounter in the political realm. There would have to be only one}
\end{flushright}

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solution to this: to know that criteria do not preexist selection itself. In society, such would be the recovered plastic condition. The whole problem always concerns knowing how not to identify the difference in advance, since selection in the order is always an act that confers value and therefore creates hierarchies and norms. How must one think at once the evaluating character inevitable to all social selection and its possible indetermination or liberty?

The only philosopher to have clearly posed this question is Nietzsche, and that is why Althusser refers to him after dealing with Machiavelli and Rousseau. It is certainly not for him to condemn selection, for the latter is inevitable, and it has an ontological foundation: becoming is itself nothing other than selection. Do not forget the following saying by Heraclitus: “For even the best of them choose one thing above all others, immortal glory among mortals, while most of them are glutted like beasts.” Becoming is so rich in differences that it can occur only upon the mode of choice. The task of philosophy is essentially selective since it chooses the differences opened by the flux of life, sorts them, and interprets them. In Ecce Homo, Nietzsche asks, “What is it, fundamentally, that allows us to recognize who has turned out well?” Which could be translated as “who has taken form”?

In Difference and Repetition, Deleuze, to whom Althusser is also referring, shows that selection produces its own criteria as it operates. It therefore becomes sensitive to the validity and viability of differences. The difference will be selected, as it unfolds, demonstrating its aptitude for return, which is to say the possibility of engendering a heritage or tradition. Thereby “good” music, for example, engenders a tradition of interpretation, a great text engenders a lineage of readers. Selection should therefore happen after the emergence or springing of difference in the same manner that variability precedes natural selection.

Althusser perfectly knows that the “political void” in which the “encounter must come about,” this political void which is also, as he says, “a philosophical void,” may not exist; if we could be certain of its existence, if we were able to know in advance, the encounter would never take place, and we would fall back into teleology again. The determination of this void of nothingness, of this point of possibility that opens all promise of justice, equality, legitimacy cannot be presupposed and cannot be as blindly and automatically regulated as in nature either. It has to be made possible. This is the philosophical task that appears with the end of the repressed materialism.
Machiavelli’s Prince is, Althusser says, “a man of nothing who has started out of nothing starting out from an unassignable place.” To find and give form to this unassignable place is what we have to do. “Unassignable” is the translation of the French *inassignable*, but I am not sure that the word has the same meaning in both languages. In French, it means indeterminate and infinite. In English, it means incapable of being repudiated or transferred to another: inalienable. But I also found unassigned: not allocated or set aside for a specific purpose. The English is then much more interesting because it opens a space within the idea of a proper, something that cannot be attributed to someone else, that cannot be denied without destroying the subject, that belongs to no one and has no destination. We can call this place, the unassignable place, the *properly anonymous*. Without qualities, without privilege, without legacies, without tradition. People of nothing, people of valor. From there and there only can new forms emerge—singular, unpredictable, unseen, regenerating—Althusser also says.

Before I ask a few questions about this “place,” let me evoke the changes caused by this new materialism in Althusser’s reading of Marx and consequently in his critique of capitalism. In the light of this new materialism, Althusser writes, Marx “was constrained to think within a horizon torn between the aleatory of the Encounter and the necessity of Revolution.” Hence, all his disavowals, debarments and philosophical betrayals. Very briefly: “In innumerable passages, Marx . . . explains that the capitalist mode of production arose from the ‘encounter’ between ‘the owners of money’ and the proletarian stripped of everything but his labour-power. It so happens that this encounter took place, and ‘took hold,’ which means that it . . . lasted, and became an accomplished fact. . . . inducing stable relationships and laws . . . : the laws of development of the capitalist mode of production . . .” So initially, Marx analyzes the constitution of capitalism as an encounter starting from the plastic void, the nothingness of the proletariat—its fundamental dispossession. But instead of remaining faithful to this vision, to the vision of a mode of production as a form taking form out of nothing, aggregating different elements and becoming gradually necessary, Marx and Engels have inverted the process. They eventually affirmed that the different elements constitutive of the encounter “were from all eternity destined to enter into combination, harmonize with one another, and reciprocally produce each other as their own ends, conditions and or complements.”

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substitute an analysis of the reproduction of the proletariat instead for its production.

When Marx and Engels say that the proletariat is “the product of big industry,” they utter a very great piece of nonsense, positioning themselves within the logic of the accomplished fact of the reproduction of the proletariat on an extended scale, not the aleatory logic of the “en-counter” which produces (rather than reproduces), as the proletariat, this mass of impoverished, expropriated human beings as one of the elements making up the mode of production. In the process, Marx and Engels shift from the first conception of the mode of production, an historico-aleatory conception, to a second, which is essentialistic and philosophical.37

So again, the task is to free the repressed philosophical status of impoverishment, expropriation, dispossession, nothingness as the origin of any formative process. Poverty, dispossession, exploitation are the points of departure of philosophical thinking not because they would constitute objects or topics for philosophers but because practice and theory both owe their energy, the power of their dynamism, to their originary absence of determinate being. The same originary “virgin forest,”38 Althusser says.

“The Underground Current of the Materialism of the Encounter” is no doubt a surprisingly anticipative text. The attempt at clearing a point of void, nothingness, and dispossession is at the heart of the most important current philosophical trends, which define themselves as materialisms. Speculative realism, for example, in its search for a noncorrelationist mode of thinking, elaborates a notion of an absolute which would be not “ours,” which would remain indifferent to us.

Opening the unassignable place in a global world, where every place is assigned, has become the most urgent ethical and political task. The problem is to succeed in not constituting it as a transcendental structure. This is what I am struggling with myself, trying to disengage my plasticity from any symbolic grip and attempting to constantly empty it from its own sovereignty.

All this is extremely fragile; the waves are constantly, repeatedly, covering up the “open fields”39 of singularity, surprise, nonanticipatable selection, recognition of aptitudes, the capacity to welcome new forms without expecting them. The waves of ownership, appropriation, repro-
duction are constantly and repeatedly covering up the originary deprivation of ontological wealth.

Whither materialism? The question won’t ever lose its ambiguity. But as Darwin says, when considering the changing nature of species, one at times has the impression that the “whole organization seems to have become plastic.”\(^{40}\) Let’s live for those times.

NOTES

1. Derrida, *Specters of Marx*.
3. This chapter was first given as a presentation under the auspices of the Centre for Research in Modern European Philosophy (CRMEP) and the London Graduate School of Kingston University London in May 2013.
16. On the relationship with Malthus, see the conclusion to Darwin, *Origin of Species*.
Catherine Malabou

The Brain of History, or,  
The Mentality of the Anthropocene

This essay is a response to the highly challenging topic on which Ian Baucom and Matthew Omelsky asked me to elaborate: “For your contribution,” they wrote, “we would be particularly interested in an essay that investigates the intersection of philosophy and neuroscience as it relates to climate change” (pers. comm., October 10, 2015). After some time, I decided to explore the link between the current constitution of the brain as the new subject of history and the type of awareness demanded by the Anthropocene.

An immediate answer to Baucom and Omelsky’s challenge would have been an exploration of the relationship between the brain and the “environment.” It is, of course, a widespread idea in global change literature that “the Anthropocene idea abolishes the break between nature and culture, between human history and the history of life and Earth,” as well as between “environment and society” (Bonneuil and Fressoz 2016: 19, 37). The blurring of these frontiers, of course, necessitates a study of the profound interaction between the sociological and the ecological, understanding them as parts of the same metabolism. I believe that this notion of “interaction” requires closer analysis,
though, and renders necessary a preliminary study of the specific concept of history in which it currently takes place.

If the Anthropocene acquires the status of a true geological epoch, it is obvious that such an epoch will determine the historical representation as well as the social and political meaning of the events occurring in it. In other words, this new geological era will not and cannot have the neutrality and a-subjectivity characteristic of geological eras in general. The Anthropocene situates the human being itself between nature and history. On the one hand, it is still of course the subject of its own history, responsible, and conscious. Consciousness of history, or “historicity,” is not separable from history itself. It entails memory, capacity to change, and, precisely, responsibility. On the other hand, though, the human of the Anthropocene, defined as a geological force, must be seen as neutral and indifferent, as a geological reality itself. The two sides of this new identity cannot mirror each other, causing a break in reflexivity.

The awareness of the Anthropocene, then, originates through an interruption of consciousness. Such is the problem. I intend to ask whether such an interruption opens the space for a substitution of the brain for consciousness. I proceed to a confrontation between two different points of view on this question. According to the first, the Anthropocene forces us to consider the human as a geological agent pure and simple. Such is Dipesh Chakrabarty’s position. I refer to his two now famous articles (Chakrabarty 2009, 2012). According to the second, understanding the Anthropocene necessarily privileges the role of the brain and thus biology. This is the approach Daniel Lord Smail takes in his On Deep History and the Brain (2008). I show how their two approaches may be seen as complementing each other and introduce in the debate, as a medium term and under a new form, some important and unjustly forgotten elements brought to light by some prominent French historians from the École des Annales—like those of “mentality” and “slow” or “long term” temporality.

Chakrabarty denies any metaphorical understanding of the “geological.” If the human has become a geological form, there has to exist somewhere, at a certain level, an isomorphy, or structural sameness, between humanity and geology. This isomorphy is what emerges—at least in the form of a question—when consciousness, precisely, gets interrupted by this very fact. Human subjectivity, as geologized, so to speak, is broken into at least two parts, revealing the split between an agent endowed with free will and the capacity to self-reflect and a neutral inorganic power, which paralyzes the energy of the former. Once again, we are not facing the dichotomy
between the historical and the biological; we are not dealing with the relationship between man understood as a living being and man understood as a subject.

Man cannot appear to itself as a geological force, because being a geological force is a mode of disappearance. Therefore, the becoming force of the human is beyond any phenomenology and has no ontological status. Human subjectivity is in a sense reduced to atoms without any atomic intention and has become structurally alien, by want of reflexivity, to its own apocalypse.

A major common point between Chakrabarty and Smail is the necessity to consider that history does not start with recorded history, but has to be envisaged as deep history. As Chakrabarty (2009: 213) suggests, “Species thinking . . . is connected to the enterprise of deep history.” Let’s recall the definition of deep history proposed by Edward Wilson (1996: ix–x), to whom both Chakrabarty and Smail refer: “Human behavior is seen as the product not just of recorded history, ten thousand years recent, but of deep history, the combined genetic and cultural changes that created humanity over hundreds of [thousands of] years.”

According to Chakrabarty, however, biological “deep past” is certainly not deep enough. In that sense, therefore, a “neurohistorical” approach to the Anthropocene remains insufficient. Neurocentrism is just another version of anthropocentrism. Focusing on the biological only, Smail would miss the geological dimension of the human: “Smail’s book pursues possible connections between biology and culture—between the history of the human brain and cultural history, in particular—while being always sensitive to the limits of biological reasoning. But it is the history of human biology and not any recent theses about the newly acquired geological agency of humans that concerns Smail” (Chakrabarty 2009: 206). The human’s recent status as geological agent paradoxically draws the historian back to a very ancient past, a time when the human itself did not exist—a time that thus exceeds “prehistory.”

One will immediately argue that Smail, in his book, is precisely undertaking a deconstruction of the concept of prehistory. Clearly, the notion of deep history represents for him the result of such a deconstruction. Deep history, then, substitutes itself for prehistory. According to the usual view, history starts with the rise of civilization and departs from a “buffer zone” between biological evolution and history proper—such a buffer zone is what precisely is called prehistory. If history must be understood, as Wilson suggests, as the originary intimate interaction between the genetic and the
cultural, it starts with the beginning of hominization and does not require the “pre” (Smail 2008).

Smail’s approach is clearly an epigenetic one, which forbids the assimilation of “hominization” with the history of consciousness. Epigenetics is a branch of molecular biology that studies the mechanisms that modify the function of genes by activating or deactivating them without altering the DNA sequence in the formation of the phenotype. Epigenetic modifications depend on two types of causes: *internal* and *structural*, on the one hand, and *environmental*, on the other. In the first case, it is a matter of the physical and chemical mechanisms (RNA, nucleosome, methylation). In the second, epigenetics supplies genetic material with a means of reacting to the evolution of environmental conditions. The definition of phenotypical malleability proposed by the American biologist Mary Jane West-Eberhard (2003: 34) is eloquent in this respect: it is a matter of the “ability of an organism to react to an environmental input with a change in form, state, movement, or rate of activity.” Contemporary epigenetics reintroduces the development of the individual into the heart of evolution, opening a new theoretical space called “evolutionary developmental biology,” or “evo-devo.”

Lambros Malafouris, in his book *How Things Shape the Mind: A Theory of Material Engagement*, shows how epigenetics has modified the usual view of cognitive development, thus constituting cognitive archeology a major field in historical studies. “Cognitive development,” he writes,

is explained as the emergent product . . . of these constraints [from genes and the individual cell to the physical and social environment]. In this context, the view of brain and cognitive development known as *probabilistic epi­genesis* . . . which emphasizes the interactions between experience and gene expression . . . is of special interest. The unidirectional formula (prevalent in molecular biology) by which genes drive and determine behavior is replaced with a new scheme that explicitly recognizes the bidirectionality of influences between the genetic, behavioral, environmental, and socio-cultural levels of analysis.” (Malafouris 2013: 40)

This new scheme requires, as Malafouris brilliantly shows, a materialist approach of the interaction between the biological and the cultural. Hence the subtitle of the book: *A Theory of Material Engagement*. The epigenetic crossing and interaction in question take place through things, through matter, which is also to say, through the inorganic. It is a “nonrepresentative” vision of interaction, which requires no subject-object relationship, no mind seeing in advance what has to be made or fabricated. Mind, brain, behavior, and the cre-
The cognitive life of things is not exhausted by their possible causal role in shaping some aspect of human intelligent behavior; the cognitive life of things also embodies a crucial enactive and constitutive role (Malafouris 2013: 44). Therefore, to explore the relationships between the brain and its “environment” is a much wider and deeper task than to study the role of the “human” in its “milieu,” precisely because it lays the foundation, for an essential part, on a nonhuman materiality and cannot be limited to a biological form of inquiry. In that sense, ecology to come acquires a new meaning: “This new ecology cannot be reduced to any of its constitutive elements (biological or artificial) and thus cannot be accounted for by looking at the isolated properties of persons or things. The challenge for archaeology, in this respect, is to reveal and articulate the variety of forms that cognitive extension can take and the diversity of feedback relationships between objects and the embodied brain as they become realized in different periods and cultural settings” (82). Malafouris then argues that this ecology should be understood as a result of the “embedment” of the human brain. “The term ‘embedment,’” Malafouris (2010: 52) writes, “derives from the fusion of the terms ‘embodiment’—referring to the intrinsic relationship between brain and body—and ‘embeddedness’—describing the intrinsic relationship between brain/body and environment.”

To conclude on that point and go back to our initial discussion, we can see that Smail’s and Malafouris’s approaches to the brain/environment relationship are not “strictly” biological but include, as a central element, the inorganic materiality of things. As Smail (2008: 48) declares: “The great historical disciplines, including geology, evolutionary biology and ethology, archeology, historical linguistics, and cosmology, all rely on evidence that has been extracted from things. Lumps of rocks, fossils, mitochondrial DNA, isotopes, behavioral patterns, potsherds, phonemes: all these things encode information about the past.” “History is something,” he continues, “that happens to people, things, organisms, and is not made by them” (57).

Deep history, conjoined with archeology of the mind, or “neuroarcheology,” would then extend the limits of the “brain” well beyond reflexivity and consciousness, well beyond “historicity” as well. As archeological, the brain/environment relationship is already also geological. It remains clear, though, that Chakrabarty would not be entirely convinced by such an argument. Even if nonanthropocentric, even if thing- and inorganic-matter-oriented, even if including at its core a neutral, a-reflexive, nonrepresentative type of interaction as well as cognitive assemblages, the conjoined point of view of deep history and archeology of the mind still takes the “human” as a point of
departure. The process of hominization is of course inseparable from an evolutionary perspective. Chakrabarty’s perspective is very close to that of French philosopher Quentin Meillassoux in his book *After Finitude*. Meillassoux argues for a “noncorrelationist” approach to the “real,” which would not lay foundation on the subject-object relationship at all and would totally elude the presence of the human on earth as a point of departure. There exists a mode of exploration of deep past (of the extremely deep past) that does not even consider the emergence of life in general as a “beginning.” Deep past, then, becomes an “ancestrality” devoid of any “ancestors”: “I will call ‘ancestral,’” Meillassoux (2008: 10) writes, “any reality anterior to the emergence of the human species—or even anterior to every recognized form of life on earth.” The archive, here, is not the object, not even the thing, not even the fossil, but what Meillassoux calls the *arche-fossil*:

I will call “arche-fossil” or “fossil-matter” not just materials indicating the traces of past life, according to the familiar sense of the term “fossil,” but materials indicating the existence of an ancestral reality or event; one that is anterior to terrestrial life. An arche-fossil thus designates the material support on the basis of which the experiments that yield estimates of ancestral phenomena proceed—for example, an isotope whose rate of radioactive decay we know, or the luminous emission of a star that informs us as to the date of its formation. (10)

For Meillassoux, the earth is entirely indifferent to our existence, anterior to any form of human presence—be it neural, be it neutral.

Again, these affirmations resonate with Chakrabarty’s claim that the notion of the “geological,” in the term *geological agent*, forever remains outside human experience. “How does a social historian go about writing a *human* history of an uninhabited and uninhabitable vast expanse of snow and ice?” he asks when talking about the Antarctic (Chakrabarty 2012: 11). A decorrelated subject cannot access itself as decorrelated. “We cannot ever experience ourselves as a geophysical force—though we now know that this is one of the modes of our collective existence” (12). Chakrabarty’s analysis adds an important element to Meillassoux’s thesis when it takes into account the experience of the impossibility to experience decorrelationism. We can conceptualize it but not experience it.

Who is the we? We humans never experience ourselves as a species. We can only intellectually comprehend or infer the existence of the human species but never experience it as such. There could be no phenomenology of us as
a species. Even if we were to emotionally identify with a word like *mankind*, we would not know what being a species is, for, in species history, humans are only an instance of the concept species as indeed would be any other life form. But one never experiences being a concept. (Chakrabarty 2009: 220)

At this point, a major issue appears, relaunching the discussion and a return to Smail’s analysis. First, we do not see what a species can be outside the biological point of view. Why keep that term? Second, I do not understand why the fact of becoming a geological form would have to remain entirely conceptual, without producing a kind of *mental phenomenon*. “Climate scientists’ history reminds us . . . that we now also have a mode of existence in which *we*—collectively and as a geophysical force and in ways we cannot experience ourselves—are ‘indifferent’ or ‘neutral’ (*I do not mean these as mental or experienced states*) to questions of intrahuman justice” (Chakrabarty 2012: 14; emphasis mine). Before coming to the political consequences of such a statement, I would like to ask why precisely we could not be susceptible to experience mentally and psychically the indifference and neutrality that have become part of our nature. Deprived of any empiricability, mental or psychic effects, the assumption of the human as a geological force remains a pure abstract argument, and, in that sense, it appears as an ontological or metaphysical structure. Just like Meillassoux, Chakrabarty ends up failing to empiricize the very structure that is supposed to detranscendentalize, so to speak, the empirical. Why should there be any intermediary locus of experience between consciousness and the suspension of consciousness?

This is where the brain demands recognition! Is not the brain, on which Chakrabarty remains silent, an essential intermediary between the historical, the biological, and the geological? That site of experience we are looking for?

This brings us back to Smail and to one of the most important and interesting aspects of his analysis, the *theory of addiction*. Smail insists that the constant interaction between the brain and the environment is essentially based on brain-body state alterations. The brain maintains itself in its changing environment by becoming addicted to it, understanding “addiction” in the proper sense as a “psychotropy,” a significant transformation or alteration of the psyche. These altering effects result from the action of neurotransmitters “such as testosterone and other androgens, estrogen, serotonin, dopamine, endorphins, oxytocin, prolactin, vasopressin, epinephrine, and so on.”
Produced in glands and synapses throughout the body, these chemicals facilitate or block the signals passing along neural pathways” (Smail 2008: 113). Such chemicals, which determine emotions, feelings, and affects in general, can be modulated according to the demands of the behavioral adaptation they make possible. Adaptation, here, is two-sided. It is of course adaptation to the external world, but it is also the adaptation of the brain to its own modifications.

All important changes in deep history, like the passage of one age to another, have always produced new addictive processes and chemical bodily state modulations:

A neurohistorical model offers an equally grand explanatory paradigm, proposing that some of the direction we detect in recent history has been created by ongoing experiments with new psychotropic mechanisms that themselves evolved against the evolutionary backdrop of human neurophysiology. The Neolithic revolution between 10,000 and 5,000 years ago transformed human ecology and led to fundamental and irreversible changes in demographics, politics, society, and economies. In this changing ecology, new mechanisms for modulating body states emerged through processes of undirected cultural evolution. (187)

We have to understand that

the expansion in calories available for human consumption, the domestication of animals useful as sources of energy, the practice of sedentism, the growing density of human settlements—such were the changes characteristic of the Neolithic revolution in all parts of the world where agriculture was independently invented: Mesopotamia, Africa, China, Mesoamerica, and other sites. All these changes created, in effect, a new neurophysiological ecosystem, a field of evolutionary adaptation in which the sorts of customs and habits that generate new neural configurations or alter brain-body states could evolve in unpredictable ways. (155)

From this, Smail concludes, “Civilization did not bring an end to biology” (155). Again, deep history reveals the profound interaction of nature and history through the mediation of the brain as both a biological and cultural adaptor. Human practices alter or affect brain-body chemistry, and, in return, brain-body chemistry alters or affects human practices. Brain epigenetic power acts as a medium between its deep past and the environment.

“The mood-altering practices, behaviors, and institutions generated by human culture are what I refer to, collectively, as psychotropic mechanisms,”
Smail explains. “Psychotropic is a strong word but not wholly inapt, for these mechanisms have neurochemical effects that are not all that dissimilar from those produced by the drugs normally called psychotropic or psychoactive” (161). Further, “Psychotropy comes in different forms: things we do that shape the moods of others; things we do to ourselves; things we ingest” (164).

We can distinguish here between autotropic and allotropic psychotropic, that is, addictive substances and practices acting on the self, and addictive practices acting on the other political addictive practices. Among the former are “coffee, sugar, chocolate, and tobacco” (179), which first began circulating in Europe in the seventeenth and eighteenth centuries. “All of these products have mildly addictive or mood-altering properties” (179). To these alcohol and drugs will later be added.

Smail recalls that the current meaning of the term addiction emerged in the late seventeenth century. “Earlier, the word had implied the state of being bound or indebted to a person—to a lord, for example, or perhaps to the devil” (183). This old meaning helps us understand what constitutes allotropy. Psychotropic addictive chemical mechanisms can also be induced in subjects out of power excess and abuse of domination. Stress and more general affective states of dependence, what Baruch Spinoza calls “sad passions,” are essential aspects of psychotropy, caused in contexts of dominance. The crossing point between modularity and change coincides precisely with the crossing point between biology and politics: “Humans possess relatively plastic or manipulable neural states and brain-body chemistries,” such that “moods, emotions, and predispositions inherited from the ancestral past” can be “violated, manipulated, or modulated” (Smail 2008: 117).

According to Smail, autotropic and allotropic addictive processes automatically mark the point of indiscernibility between biology (chemical substances and mechanisms) and culture (being-in-the-world). We find again the idea that the brain is the mediator between the two dimensions of (deep) history: the natural and the historical.

How can we extend these remarks to the current situation? First, they lead us to admit that only new addictions will help us to lessen the effects of climate change (eating differently, traveling differently, dressing differently, etc.). Addictive processes have in large part caused the Anthropocene, and only new addictions will be able to partly counter them. Second, they force us to elaborate a renewed concept of the addicted subject, of suspended consciousness and intermittent freedom. Third, they allow us to argue that the neutrality Chakrabarty speaks of is not conceivable outside of a new psychotropy, a mental and psychic experience of the disaffection of experience. Such
a psychotropy would precisely fill the gap between the transcendental structure of the geological dimension of the human and the practical disaffection of historical reflexivity. The subject of the Anthropocene cannot but become addicted to its own indifference—addicted to the concept it has become. And that happens in the brain.

The motif of a narcolepsy of consciousness, as both cause and effect of the technological destruction of nature, had already been interestingly and importantly suggested by Marshall McLuhan. His analysis seems to fit the framework of the current ecological crisis perfectly. Technological development coincides for him with an extension of the nervous system to the very limits of the world: “After three thousand years of explosion, by means of fragmentary and mechanical technologies,” he writes, “the Western world is imploding. During the mechanical ages we had extended our bodies in space. Today, after more than a century of electric technology, we have extended our central nervous system itself in a global embrace, abolishing both space and time as far as our planet is concerned” (McLuhan [1964] 1990: 52). The extension of the nervous system to the world has a double contradictory effect, acting as a pain killer (a “counter-irritant”) to the extent that it suppresses all alterity and, at the same time and for the same reason, acting as a destructive power. Such is the structure of our “narcotic culture.” Every technological device is a prolongation of the brain and the organism, and McLuhan characterizes this prolongation as a process of “auto-amputation” that helps lower the pressure and creates anxiety, thus putting at work an economy of pleasure as “numbness.”

One might argue that the world about which McLuhan talks, the world to which the nervous system extends its frontiers is an image, a reflecting surface, whereas the split Chakrabarty analyzes as the separation between the human as a historical agent and the human as a geological force confronts two heterogeneous entities that cannot reflect each other at all. Nevertheless, if we look closely at what McLuhan says about mirroring, narcissism, and the projection of one’s own image, we see that reflection is for him immediately suspended by a spontaneous petrification, a geologization of both the gaze and the image. On the myth of Narcissus, McLuhan writes ([1964] 1990: 53): “As counter-irritant, the image produces a generalized numbness or shock that declines recognition. Self-amputation forbids self-recognition.” Indifference and neutrality, once again, can be mental phenomena, even when their manifestations may seem totally alien to any mental or internalizing structure. Again, I do not think that the neutralization of consciousness due to its “geologization” can happen without the intermedi-
ary of brain processes resulting from its interaction with the world. Indeed, I have tried to show elsewhere that indifference has become the global current Stimmung, that is, atunement or affect (Malabou 2012).

Such an indifference, this interruption of consciousness or awareness, directly challenges the concept of responsibility, which is of course central in our debate. How can we feel genuinely responsible for what we have done to the earth if such a deed is the result of an addicted and addictive slumber of responsibility itself? It seems impossible to produce a genuine awareness of addiction (awareness of addiction is always an addicted form of awareness). Only the setting of new addictions can help in breaking old ones. Ecology has to become a new libidinal economy.

These are some of the issues that political discourses on climate change, as demonstrated at conferences like the recent twenty-first session of the Conference of the Parties (COP21) to the United Nations Framework Convention on Climate Change in Paris, do not genuinely take into account. Most of the time, the official ecological discourse is still only a discourse on awareness and responsibility. That of course does not mean that the human is not responsible for global warming. Nevertheless, the type of responsibility requested by the Anthropocene is extremely paradoxical and difficult to the extent that it implies the acknowledgment of an essential paralysis of responsibility.

Chakrabarty would no doubt argue that these last developments remain caught in the correlationist frame. They would still be human, all too human. Do they not let aside the issue of nature as such to only take into account humanity’s technoscientific power and its psychotropic causes and consequences?

The traditional concept of history, Chakrabarty writes, implies a disavowal of the fact that nature can have a history. It presupposes a strict border between pure contingent facts (natural ones) and events understood as acts of agents. Benedetto Croce, for example, claims that “there is no world but the human world” (Chakrabarty 2009: 203). French historian Fernand Braudel, in his book *The Mediterranean and the Ancient World* (2001), of course rebelled against such a vision by taking into account the specific temporality of the Mediterranean natural environment, the soil, the biosphere, and so on. Nevertheless, this time of nature is still seen as purely repetitive and mechanical, deprived of any agency or eventual power; it “is a history of constant repetition, ever-recurring cycles” (Chakrabarty 2009: 204). Such a contention is not sustainable any longer, because the age of the Anthropocene teaches something already widespread in the “literature of global warming”: “The overall environ-
ment can sometimes reach a tipping point at which this slow and apparently timeless backdrop for human actions transforms itself with a speed that can only spell disaster for human beings” (Chakrabarty 2009: 205).

How do we respond to this? It is obvious that Braudel has not thematized or even perceived the historicity of nature, its mutability and ability to transform itself. In *The Mediterranean and the Ancient World* (Braudel 2001), the analysis of climate is definitely poor, as Braudel does not say a word, or at least nothing significant, about ecology. In that sense, Chakrabarty is right to challenge the cyclical vision of natural time that still governs Braudel’s notion of nature’s time and space. It seems to me, though, that Chakrabarty does not see how helpful Braudel nevertheless can be for our discussion. It is true that what Braudel calls the “geohistorical time,” the archaic natural time, does not change. The “very long term” time, made of thousands of years, geological time proper, seems to be deprived of any capacity to transform itself. But it is striking to note that the two other levels Braudel distinguishes, that of economic and social time (middle term duration) and that of the event (short term temporality), are also contaminated by the first level’s immobility. And here is the interesting point. Braudel has perhaps failed to take into account the historical force of nature, but he certainly very early and accurately perceived the irrevocable naturalization of human history, that is, of economic, political, and social time. He described better than anyone else the narcolepsy of historical temporality, to such a point that he was accused of depoliticizing it.

Deconstructing the privilege of the event, Braudel showed that a geological principle, that of a blind slowing force, was operating at all layers of time. In that sense, he anticipated something from the current situation, to the extent that he announced that historical consciousness had to acknowledge its own naturalization and suspension by entering the reign of immobility. In that sense, what Chakrabarty sees as a consequence (the human transformed into a geological force because of climate change and the entry into the Anthropocene), Braudel saw as a beginning (history has always already slowed down, thus preparing itself for its own neutralization by nature). What Braudel said about capitalism is extremely interesting in this respect. He argued that material life progresses by means of “slow evolutions.” Advances occur “very slowly over long periods by the initiative of groups of men, not individuals . . . , and in countless varied and obscure ways” (Braudel 1973: 258). Great technical revolutions infiltrate society
“slowly and with difficulty... to speak of revolution here is to use a figure of speech. Nothing took place at break-neck speed” (442).

One might object again that long term temporality presupposes an essential passivity and unchangeability of nature, that it cannot account for a sudden constitution of nature itself as a historical acting agent, like the one we are currently witnessing with the Anthropocene. That is true. But the problem, as we have seen all along, is that approaching the historical force of nature paradoxically leads us to slow down, to face the suspension of consciousness, the numbness and slumber of our responsibility. It is in a certain sense like exchanging roles, nature becoming historical and the anthropos becoming natural. This exchange constitutes a new form of human experience, and this Braudel helps us to conceptualize.

The third generation of the Annales School in France—Marc Ferro, Jacques Le Goff, and Emmanuel Le Roy Ladurie—still increased the part played by the very long term temporality. As one of them declares: “Time is fully human, and yet, it is as motionless as geographic evolution” (Dosse quoting Aries 1987: 165).1 Braudel’s work found itself extended and prolonged by the introduction of an important concept that emerged at that time in historical science, that of “mentality,” closer to the psychological than to the intellectual. The acknowledgment of slow time, or long term time, gave way to a “history of mentalities” (histoire des mentalités). Based on “material culture,” that is, on the similarities between the mind’s rhythms and natural cycles, history of mentalities provided its readers with descriptions and analyses of uses, repetitions, habits, and representations. Philippe Aries (1981) declared that the history of mentalities situated itself “at the crossing point between the biological and the social” (quoted in Dosse 1987: 198).

As we already noticed, this crossing point between the biological and the social does not mean that the biological must be taken as a point of departure or that the human as a living being should become the origin of historical research. The history of mentality also includes, as one of essential dimension, the materiality of inorganic nature, the soil, the rocks, the mountains, the rivers, the earth. A mentality is a hybrid concept that comprehends not only the psychic and the social but also the originary likeliness of the mind and the fossil, the inscription of naturality in thought and behavior. Mentality, in that sense, is rooted in the brain and not in consciousness. “The human reduced to its ‘mental’ is the object rather than the subject of its own history” (“L’homme réduit à son mental est objet de son histoire plutôt que sujet”) (Dosse 1987: 206). Jean Delumeau (1990), author of the important La peur en Occident, XIVe–XVIIIe siècles: Une cité assiégée (Sin and Fear: The Emergence of
a Western Guilt Culture, Thirteenth to Eighteenth Centuries), writes, while playing with the multiple sense of the term natural: “Fear is natural” (quoted in Dosse 1987: 206). As a consequence of all previous analyses, we may consider history of mentalities to be the first form of environmental studies in France. Could it be that new histories of mentalities, which would bring together the geological, biological, and cultural current dimensions of historical (non) awareness, may open a new chapter of Anthropocenic study?

What seems to me challengeable in Chakrabarty’s work is the claim of an impossibility to phenomenalize the geological becoming of the human. This “species” the human remains a pure void concept until it can be filled with intuition, that is, with empirical and sensuous content, if not with awareness. A renewed and reelaborated concept of mentality might precisely help provide the missing content of this form. There necessarily exists a mental effect of the numbness and paralysis of consciousness, a mental effect of the new narcoleptic structure of humanity’s (impossible) reflection on itself. We have seen, with Smail and McLuhan, that this mental effect was a neural one in the first place. Again, it is not a matter of thinking the brain “in” its environment; it’s a matter of seeing the brain as an environment, as a metabolic place. Therefore, I prefer using the term mental rather than neural, because mental immediately evokes the merging and mingling of different registers of materialities. In that sense, getting accustomed to the new condition of the human as a geological agent will of course require a new mentality, that is, new addictions, new bodily adaptations to an inorganic and earthly corporeity, a new natural history. A history, still, nevertheless.

Reading Braudel and his followers helps us perceive that the narcolepsy of consciousness constitutes an irreducible dimension of history. Long term temporality, immobility, and very slow evolution show that deep history has always been inscribed at the heart of history, as this numbness of time and action that submits cultural evolution to a geophysical rhythm. Braudel is perhaps not a thinker of climate change, but he is a great theoretician of a new form of Marxism that binds the critique of capital to a study of the irreducible naturality, neutrality, and passivity of time. The critique addressed to the historians of long term duration and mentalities was the same as the ones currently addressed to Chakrabarty, all pointing, in both cases, at a supposed depoliticization of history. François Dosse (1987: 258) wrote that with the École des Annales, in the end, “history ha[d] negated itself.” He wished that “the event” might come back in order to wake up time from its geologi-
cal slumber. . . . He could not foresee that with the Anthropocene, long term temporality would precisely acquire the status of an event—which would free the attempt at thinking ecology and politics differently.

**Note**

1  Unless otherwise indicated, all translations are mine.

**References**


