

## Chapter 26. *Les Mutants* - The Mutants

*Notes pour la Clef des Songes* was at first just meant to be a set of comments on the main text, *La Clef des Songes*. These soon coalesced, however, into a largely independent text, which in many respects appears even more interesting than *La Clef des Songes*.

*Notes pour la Clef des Songes* consists of two independent parts. The first one contains fifty-seven sections forming a total of five chapters (176 pages) and refers more or less to *La Clef des Songes*. The second part, titled *Notes pour le chapitre VII de la Clef des Songes, ou Les Mutants* comprises eighty-eight sections (515 pages) and is an independent text with a clearly recognizable theme. Apart from some amendments and footnotes, the text was written in a single burst between September 18, 1987 and April 2, 1988. The rather peculiar title “The Mutants” (a word which in French seems to be borrowed from terminology usually reserved for science fiction) refers to people who, from a spiritual point of view, differ from “normal mortals”.

A central, if not very original, theme in Grothendieck's world of thought was the spiritual downfall of humanity, the ensuing apocalypse and the imminent “New Age”, which was to be an age of freedom and self-determination, and of life in harmony with one's own “soul”. The *mutants* are people who announce and anticipate this new age. He chose them with this in mind.

At one point in the text Grothendieck gives the following explanation of this concept (slightly shortened in the translation):

In this century, as no doubt in the last one, there have been a certain number of individuals who in my eyes appear as “new humans”, humans who, like “mutants”, suddenly appear and in one way or another embody in the present the “human of tomorrow”, humans in the full sense, who without doubt will develop in the coming generations, in the “post-herd- age”, whose dawning is imminent and which they silently herald.

In several hundred pages Grothendieck discusses the life and work of a total of eighteen mutants. In doing so, it becomes clear that he perceived a personal relationship between these mutants and himself; he occasionally refers to himself as their heir, or to one of them as an “elder brother”. *Les Mutants* is essentially different from Grothendieck's earlier philosophical meditations, in that he speaks mainly about people that he admires, rather than about himself. This makes the reading of the text easier, more interesting and more pleasant than that of earlier meditations.

Let us give the list of mutants, as compiled by Grothendieck himself (with some dates added or corrected). Observe that the word “instructor” appears frequently in this list (“*instructeur*” in the original) and requires some explanation.

1. **C. F. S. Hahnemann** (1755-1843): German doctor and savant, modernized the medicine of his time.
2. **C. Darwin** (1809-1882): English natural scientist; savant.
3. **W. Whitman** (1819-1892): American journalist, writer and author; poet and savant.
4. **B. Riemann** (1826-1866): German mathematician; savant.
5. **Râmakrishna** (1836-1886): Indian (Hindu) preacher, instructor.
6. **R. M. Bucke** (1837-1902): American doctor and psychiatrist; instructor and *annonciateur* [herald].
7. **P. A. Kropotkin** (1842-1921): Russian geographer and savant; anarchist revolutionary.
8. **E. Carpenter** (1844-1929): English pastor, farmer, thinker and writer, instructor.
9. **S. Freud** (1856-1939): Austrian doctor and psychiatrist; savant and founder of psychoanalysis, the key to a new scientific humanism.
10. **R. Steiner** (1861-1925): German savant, philosopher, writer, speaker, pedagogue; visionary instructor, founder of Anthroposophy.
11. **M. K. Gandhi** (1869-1948): Indian lawyer and politician, instructor, advocated for the spread of *ahimsa* (non-violence).
12. **P. Teilhard de Chardin** (1881-1955): French (Jesuit) priest and paleontologist; (Christian) religious ecumenical thinker, mystical visionary, worked for a reconciliation between religion and science.
13. **A. S. Neill** (1883-1973): English instructor and teacher and pedagogue, who campaigned for an education with freedom.
14. **N. Fujii** (known as Fujii Guruji) (1885-1985): Japanese buddhist monk; instructor.
15. **J. Krishnamurti** (1895-1986): Indian religious thinker, speaker and writer; instructor.
16. **M. Légaut** (1900-1990): University lecturer, farmer, French Christian religious thinker and writer, follower of Jesus of Nazareth, worked for the spiritual renewal of Christianity.
17. **F. Carrasquer** (1905-1993): Spanish primary schoolteacher and educator; pedagogue and militant anarchist, believed in a “self- determined” school and society.

18. **E. Slovik** (1920-1945): American worker and employee; apparently without any special calling<sup>1</sup>.

Chance doubtless played a large role in the selection of these *mutants*<sup>2</sup>: Grothendieck either read something by them or learned something about them by “coincidence”; in some cases he actually describes these “coincidences” in detail. We have already written extensively about Fujii Guruji and Grothendieck's relationship to him in Chapter 16, and about Marcel Légaut in the previous two chapters. We will address Felix Carrasquer in the next chapter.

Of all the *mutants*, Légaut probably had the greatest influence on Grothendieck's thinking. Reading his books was something of a revelation for Grothendieck, gave his thoughts a new direction and probably also contributed to leading him towards belief in a personal God<sup>3</sup>. In contrast, Grothendieck repeatedly describes Carrasquer as his oldest and best friend (although this relationship was interrupted for several years).

The scope of this book does not allow for more than a few words about some of the *mutants*. Before beginning, let it be said that Grothendieck discusses the life, works and world view of each of these eighteen mutants in light of ten aspects. These are the following<sup>4</sup>:

- 1) **Sex** (*sexe*)
- 2) **War** (*guerre*)
- 3) **Self-knowledge** (*connaissance de soi*)
- 4) **Religion** (with a rather long explanation of what is meant by this; in any case not the church as an institution and not the liturgy)

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<sup>1</sup> Grothendieck did not remember the name correctly and wrote Solvik. The author was thus at first unable to identify "Solvik" and thanks Ben Thomas for the tip about the right name.

<sup>2</sup> Grothendieck himself says in various places that evidently other people deserved to be added to the list. In connection with Whitman and Bucke he mentions in particular Horace Traubel, in connection with Neill, the Soviet pedagogue Anton Makarenko and above all Leo Tolstoy. He also mentions Goethe, but deplored his own "ignorance": he simply did not know enough about Goethe.

<sup>3</sup> This point should be followed up more thoroughly in the context of a global description of Grothendieck's “philosophy” and world view. Before the eighties, he spoke more of a creative intelligence or creative power than of a personal God.

<sup>4</sup> Iris Rutz-Rudel remarks in an internet blog that she is very familiar both with these aspects and many of the “mutants”, from discussions which took place in the hippie communes in Olmet and the surrounding area during the seventies.

- 5) **(Natural) Science** (*science*)
- 6) **Culture** (*la civilisation actuelle et ses valeurs "culture"*)
- 7) **Eschatology** (*la question des destinées de l'humanité dans son ensemble, "eschatologie"*)
- 8) **Social Justice** (*justice sociale*)
- 9) **Education** (*éducation*)
- 10) **Spirituality** (*"science de demain" ou "science spirituelle"*).

Some explanatory remarks on this would perhaps be appropriate. First of all, these categories reflect the order of the three fundamental levels of human beings (the physical, the intellectual and the spiritual). For this reason *sex* appears in the first position, but also because Grothendieck, like Neill, believes that sexual freedom is a requirement for freedom in general. As he wrote: "I believe that Neill is the first person in our long history who had the audacity and the innocence to realize that the key to the liberty of man is 'sexual freedom'."

War, for Grothendieck, is the absolute human evil, and rejection of the military and military power is the crux of his message. For him, self-awareness is not only a goal in itself but above all the necessary prerequisite to the achievement of true spirituality and the ability to announce and fulfill on Earth the will of the "loving God". In the "Letter of Good News" in which he first announced the New Age (see Chapter 29), he demanded self-awareness as a first step from his correspondents. The last visitors who found their way to him were sent away with the request that they should first find the way to themselves.

Science, for Grothendieck, in spite of all critical distance, still remains the key to understanding the world and humans, and more than once Grothendieck repeats that science was his personal calling. It is far from clear how this should be understood however, as at the same time he often speaks of his time as an active mathematician, for example in *Récoltes et Semailles*, as nothing more than a "journey in the desert". Most surprising is the significance that Grothendieck attributes to "education". On this subject, he shows himself in an unknown light. We have already discussed his attentive study of his friend Carrasquer's approach to reforms. He discusses Neill and Summerhill in similar detail, and also brings the aspect of the instructor to the fore when covering some of the other mutants.

Let us now make a few remarks about some of the "mutants" themselves<sup>5</sup>.

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<sup>5</sup> It would be greater than the scope of this book allows to examine how Grothendieck saw the relationship of each one of these eighteen mutants to the ten aspects. He makes use of a sort of "matrix", in which these relationships are set out.

It is remarkable that **Bernhard Riemann** appears in the list of mutants, because Grothendieck knew very little about him and also because he does not really fit in. He is the only mathematician, and also the only member of the list who was important uniquely as a scientist. Also Charles Darwin and Sigmund Freud were first and foremost scientists, but more importantly, each of them fundamentally altered our view of humanity forever, something which one can certainly not assert about Riemann. Grothendieck's knowledge of Riemann and his life came uniquely from the slender volume of his “works” published by Weber and Dedekind (which he had read much earlier, and did not even have in his possession at the time of writing *Les Mutants*). Grothendieck was especially impressed by the “fragments of philosophical content” which were printed as an appendix. It is astonishing that with so little in terms of sources, Grothendieck succeeded in sketching a clear and pertinent picture of Riemann.

When speaking of Riemann and Grothendieck, the first observation that presents itself is that throughout all of his meditations, Grothendieck apparently does not mention the “Riemann hypothesis” even once. This is particularly remarkable considering the fact that this hypothesis set the direction for his own mathematical work; indeed, Grothendieck himself says that one of the main goals of his reconstruction of algebraic geometry was to prove the Weil conjectures (which are a version of the Riemann hypothesis for algebraic varieties over finite fields), and one may assume that he had the original Riemann conjecture in mind as a long-term objective. In his meditations and in *Les Mutants* however, Riemann seems to interest him only as a natural philosopher. He explicitly mentions Riemann's work on the “Mechanics of the Ear” and his “Paper on Electrodynamics” and “Philosophical Fragments”.

Grothendieck places a special value on Riemann's remarks on a possible discrete structure of physical space. At least three times he mentions this content with special emphasis: in *Récoltes et Semailles* (p. P 58), in *Les Mutants* (p. 299) and in a letter about physics to an unknown addressee on June 24, 1991<sup>6</sup>. It is not completely clear to which of Riemann's remarks he is referring. In “On the Hypotheses which lie at the Basis of Geometry” Riemann only writes: “Either therefore the reality which underlies space must form a discrete manifold, or...” and in the fragment “On Psychology and Metaphysics” he notes in the Antinomies: “Finite elements of Space and Time [versus] Continuity.” One cannot find anything further on this subject. One can easily imagine, however, that for Grothendieck, who always saw himself as a geometer, the idea of a discrete space was natural (keyword “scheme”).

Grothendieck says very little in concrete terms about Riemann. Let us quote a few lines that contain the essentials:

I learned with some surprise when reading it [a volume of biographical notes on Riemann by Heinrich Weber] for the first time long ago, that Riemann was a deeply religious man. One can sense it in the philosophical notes which have been passed down to us, and at the same time they show us a depth and independence of vision which surpasses by far the

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<sup>6</sup> This letter can be found on the Grothendieck Circle website.

sorts of attitudes and ideas which at every age have limited thinkers [...] His special genius, both in mathematics and in all other domains to which he applied his mind, consists of an amazing sense for neuralgic or fundamental questions and for the structures which they suggest, and that with what seems to me a total *liberty* (and which surely in the course of history only very few people have achieved) [...] To a degree which is seldom reached, he represents for me a spirit free from the atavism of the herd.

Apart from this Riemann does not fit into the list of *mutants* particularly well; he is clearly different from all the others. Indeed Riemann possessed a shy, indeed inhibited personality and had little in common with the extroverted, active men in the list. He did not want to change the world, he did not wish to convince even one single individual of anything, one cannot imagine him as a speaker or even as an “instructor”, he did not advocate for freedom or anarchy, not to mention self-determined sexuality, and not even for his religion. He was a brilliant mathematician, and perhaps he had, as Grothendieck said, found his way to an unusual inner freedom. One may consider him (depending on one's convictions) as the forerunner of the coming age, but he certainly does not announce it.

There is, however, another point where Riemann and Grothendieck's world of thought overlap, which some might consider rather bizarre. Apparently Riemann, following the ideas of the German philosopher Fechner, believed that plants have souls (and beyond this that the whole Earth has a soul). The belief in the souls of plants represents an essential component of Grothendieck's spirituality. Since his “disappearance” in 1991 he lived in close spiritual contact with plants, he speaks of them as his “friends”, and apparently he attempted to distill their souls or psyches through chemical or alchemical processes. (More will be said on this in the fourth volume of this biography.)

If one wanted to characterize **Edward Carpenter** in two words, one would perhaps call him a mystical socialist. He was a writer, poet, thinker, philosopher and university reformer, an admirer of Walt Whitman and above all, in the puritanical England of his time, he was a pioneer for the rights of women and homosexuals (of both sexes). He studied Far Eastern religions and joined the socialist movement. His main literary work, with the revealing title *Towards Democracy*, is a collection of about three hundred lyrical poems. He wrote books on the role of sexuality in society such as *Love's Coming of Age*, *The Intermediate Sex*, *Intermediate Types Among Primitive Folks*, in which he mainly advocates the freedom of sexual self-determination for women and homosexuals; he also authored an autobiography entitled *My Days and Dreams*. Clearly there are many points in common with Grothendieck's philosophy. Even more remarkable is that the choice of ten aspects cited above was influenced mainly by Carter, as can be seen in the following quotation (p. 648):

Among the “azimuths” (or “regions”) of human existence which Carpenter probed,[...] I have been able to note the following: *sex*, and the carnal world of senses and perceptions; *religion* and the religious and mystical experience; *science*: that of origins and of the past, that of our time, and that of tomorrow [...]; *art* and its relationship to life; the creative processes in the psyche and in the Cosmos, and particularly in Evolution; *morality*, the customs and habits in human and animal life; *society* and its evolution; the social movements and the fight for social justice (a fight in which he actively took part); the defense of conscientious objection and the fight against *war*; the critique of the justice

and penitentiary systems and the “defense of criminals”; *political economy*: the relationship of mankind to the Earth and to the animal and vegetable world (recognizing in the practice of vivisection an ignorant and barbaric transgression of the cosmic laws, which connect mankind to his animal brothers); the relationship of mankind to his *work* and the product of his work, relationships between the producer and the buyer-consumer; a profound sense of the common sources of the *great myths* which are found across all the religions, like so many aspects of a “universal religion”[...]; history of religion, and of science and art (born out of religion in their original state), in an evolutionist and eschatological vision of the future of humanity and the destinies of each person...

Grothendieck greatly admired Carpenter, as can be seen in a letter to his German friends: “I’ve dug up several other books by him, all first, absolute first class. Learned a lot. He even shows up in my dreams, a great guy.”

It is evident that Grothendieck immensely admired all of his mutants, with a single exception: **Charles Darwin**. Or better said: if he admired Charles Darwin at all, it was on an intellectual plane, but not an emotional one. Perhaps this emotional distance is the reason for which - in the author's opinion - the sections on Darwin are the easiest to read and the most “comprehensible” of the entire text. Towards the end of the period that he spent at the IHES, Grothendieck conceived an interest in biology, and perhaps his portrayal of Darwin’s work and significance is an echo of this earlier interest. In 1971 in a footnote from the Bulletin of *Survivre* he wrote:

Darwin, English zoologist and botanist, one of the first who had a generally correct idea on the evolution of species. At first his opinions were wildly fought by a scandalous army of know-it-alls, but for the last thirty years they has been accepted in their essentials by the whole world: by geologists, geneticists, paleontologists [...] They are described with a wealth of detail in his thick and wonderful tome *Evolution of the Species*, absolutely enthralling for anyone who can read and is not yet too dull to have lost all interest in such things as: Where do we come from and where are we going (if anything should remain of us)?

Grothendieck clearly felt it necessary to justify placing Darwin in the list of mutants, because he begins his description with the following words (p. 650):

If I have included Darwin in “my mutants”, it is because of the profound influence which his theory of Evolution has had on the history of thought, and in particular on the concept that man forms of himself, of his history and of his place in the realm of the living. There are surely very few men in the course of our history whose influence has had such impact. In modern times I do not see anyone except Freud (whose influence seems to me even more profound and crucial). It is true that from the spiritual standpoint which I embrace here, Darwin's exceptional role does not necessarily imply that seeing him as a “mutant” is justified. [...]

When reading Grothendieck's entire text on Darwin, it becomes obvious why Grothendieck included Darwin in his list of “mutants” (in spite of the critique and even rejection): Darwin “discovered” the vast “tree of life”, which includes *all* life from its very first beginnings in the unfathomable past up to the present and through to the end of the world, which one day will come, and this tree, in its vastness, acquires a mystical quality:

When thinking of Darwin and Evolution, one immediately thinks of the tree of evolution (also called the “phylogenetic tree”) - this gigantic tree, formed of all plant and animal

species present and past, originating one from another and all from the same common trunk, which represents innumerable generations of original species of unicellular creatures; a Tree in which our proud and fragile species is one of the last sprigs in an exuberant proliferation of boughs and branches, of twigs and stems, which have burgeoned one by one, and grown and branched out infinitely in the course of thousands upon thousands of millennia.

And Grothendieck is certainly justified when he states that no one has had more influence on today's view of humanity than Darwin and Freud.

**Sigmund Freud** is the last to be dealt with in detail in *Les Mutants*; the final thirty pages of the text are dedicated to him. He occupies a unique and special position in that, as the founder of psychoanalysis, he is the first to have studied the phenomena of dreaming with scientific methods (which he developed himself), and also because as a doctor and psychiatrist what he says is relevant to Grothendieck's problems and traumatic experiences, which were certainly one of the reasons behind the writing of *Les Mutants*.

At the beginning of the sections on Freud (p. 660) Grothendieck wrote that he had at first held a very critical attitude towards Freud, and had until recently never imagined that he might consider him in his *Réflexions*. He knew Freud about as much or as little as everyone does, more by hearsay than from reading his works. In the course of the work on *La Clef des Songes* he became familiar with the ideas of Freud, and from then on spoke of him in tones of great admiration. He does not write about Freud's life at all, and makes only a short summary of his most important scientific achievements. Grothendieck sees Freud's most important achievements as the following: the discovery of the unconscious, the discovery of the omnipresence of eros and sexuality and the theory of dreams and their interpretation and meaning. He calls dreams the messengers of the unconscious.

Freud's first great idea concerns the Unconscious. First of all the very existence of an Unconscious - a vast sunken part of the psyche, hidden from conscious view. And further, the omnipresence of this Unconscious: the Unconscious is *everywhere* [...]

The second idea of Freud which I would like to evoke concerns Eros, or the erotic drive or sex drive, or (as he calls it) "the libido". [...] The great new idea of Freud concerning Eros, and his first truly great discovery about the psyche is the omnipresence of Eros. [...] Eros is everywhere - especially where one least expects to find it.

I now come to the third crucial discovery of Freud which is inextricably linked to the preceding ones. This concerns *the dream*. [...] The great discovery of Freud about dreams is that *the dream* is the messenger of the unconscious *par excellence*. [...] The heart of his new doctrine is his theory of dreams.

At this point a question arises which has not been answered; indeed one may spot here a blatant and irresolvable contradiction. Indeed, as we saw in Chapter 24, Grothendieck developed his own "theory of dreams" in *La Clef des Songes*, whose central ideas are that first of all dreams are sent to people from an outside power, and secondly that this outside power is none other than God himself - a theory that appears to be the exact opposite of the scientific and rational theory of Freud. Grothendieck does not make the slightest comment on this contradiction, however, or

even appear to notice it. Without a detailed analysis of the text, the question must remain open as to whether and how Grothendieck managed to combine these two perspectives on the dream process, or allowed them to coexist.

The last point which must be mentioned with regard to Freud, is that Grothendieck was fully aware that as a psychiatrist, Freud's ideas could be relevant to his own life.

In the very last section of *Les Mutants*, entitled “*pulsion incestueuse et sublimation*” Grothendieck approaches a subject which concerned him throughout his life: the taboo of incest, in particular incest between mother and son. He states explicitly that the Oedipus complex (discovered by Freud) played no role in his life, that there was no antagonism in his relationship to his father. And he writes further:

But for men as for women, the presence of an incestuous drive towards the parent of the opposite sex cannot occasion me the slightest doubt. I suspect that it is a *universal* drive, inextricably linked to the presence of the innate archetype of the mother and of the father in the deep Unconscious of the human psyche.

We must remember that Grothendieck's first meditation - perhaps more of a literary work - was the *Éloge d'Inceste*, and that in his writings he spoke repeatedly about his relationship with his mother, which was characterized by a destructive love-hatred. The last sentence of *Les Mutants* is:

Quant à l'humanité de demain, ou dans cent ans ou dans mille ans, je pressens qu'elle se distinguera de celle d'avant la Mutation par le fait que la pulsion incestueuse deviendra de plus en plus consciente, et que de plus (et en règle générale) sa sublimation se fera de façon de plus en plus aisée et de plus en plus parfaite<sup>7</sup>.

As a member of the list of mutant, **Eddie Slovik** seems to break the mold. Let us give some brief information about who he was. Eddie Slovik was the only soldier in the history of the American army who was ever condemned and executed for “desertion in the face of the enemy”. (There were numerous death sentences for desertion, but no one except Slovik was actually executed.) The incident happened in the last weeks of World War II in the Vosges. Evidently an example had to be set. The case went before the Supreme Allied commander, Eisenhower, and he signed the death sentence. Grothendieck had already learned of the case in the early part of 1955 during his stay in Kansas, by reading the book *The Execution of Private Slovik* by the American journalist William B. Huie. The author examined every detail, interviewed witnesses, and portrays the sentence as a clear case of judicial murder. When writing *Les Mutants*, Grothendieck no longer was in possession of the book, which he had bought for a few cents at the airport of Chicago. He wrote the corresponding sections based on his recollections. Wikipedia states the following about Slovik:

On October 8, Slovik told his company commander [...] that he was “too scared” to serve in a rifle company and asked to be reassigned to a rear area unit. He also told Grotte he

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<sup>7</sup> As for the humanity of tomorrow, or in one hundred or one thousand years, I foresee that it will distinguish itself from the one before the Mutation in that the incestuous drive will become ever more conscious, and that (in general) it will be sublimated with increasing ease and perfection.

would run away if assigned to a rifle unit and asked if that would be desertion. Grotte told him it would be desertion and refused his request ...

On October 9, Slovik went to the MP [Military Police] and gave him a confession in which he wrote that he was going to “run away again” if he was sent into combat. Slovik was brought before Lieutenant Colonel Ross Henbest, who offered Slovik an opportunity to tear up the note and face no further charges. Slovik refused and wrote a further note stating that he understood what he was doing and its consequences.

Slovik was taken into custody and confined to the division stockade. The divisional judge advocate ... again offered Slovik an opportunity to rejoin his unit and have the charges suspended. He also offered Slovik a transfer to another infantry regiment. Slovik declined these offers and said, “I’ve made up my mind. I’ll take my court martial.”

...The nine officers of the court found Slovik guilty and sentenced him to death. ...

On December 9, Slovik wrote a letter to Gen. Dwight D. Eisenhower, ... pleading for clemency, but desertion had become a problem and Eisenhower confirmed the execution order ... Slovik's death by firing squad ... was carried out at 10:04 on January 31, 1945, ...

...Although his wife and others have petitioned seven U.S. presidents, Slovik has not been pardoned.

It is hardly necessary to explain why this case made such a great impression on Grothendieck: the absolute rejection of war and the willingness to assume all the consequences of one's own convictions. But above all it was the fact that Slovik was a perfectly “ordinary” person, a person who had gone astray in his youth and had been convicted for auto theft, drunk driving, driving without a license, and similar offenses, someone not particularly educated, without ideals, perhaps an atheist. It is remarkable and extremely revealing that Grothendieck saw also in this man the “human being of tomorrow”.



Eddie Slovik